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**NAVAL
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MONTEREY, CALIFORNIA

THESIS

**BRAZIL FOR SALE? DOES SINO-BRAZILIAN TRADE OR
INVESTMENT SIGNIFICANTLY INFLUENCE BRAZIL'S
UNITED NATIONS GENERAL ASSEMBLY (UNGA)
VOTING PATTERN?**

by

Kathleen S. Bailey

December 2011

Thesis Co-Advisors:

Robert M. McNab
Christopher Twomey

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**BRAZIL FOR SALE? DOES SINO-BRAZILIAN TRADE OR INVESTMENT
SIGNIFICANTLY INFLUENCE BRAZIL'S UNITED NATIONS GENERAL
ASSEMBLY (UNGA) VOTING PATTERN?**

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Submitted in partial fulfillment of the
requirements for the degree of

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ABSTRACT

This thesis examines whether Sino-Brazilian trade or investment significantly influences Brazil's voting in the United Nations General Assembly (UNGA). To examine this relationship, this thesis regresses a dataset of UNGA votes, which the literature commonly uses to represent political influence, with trade and investment data. Understanding whether the growing Sino-Brazilian economic relationship politically impacts Brazil is important both to Brazil and to the United States. Any increase in Chinese influence on Brazil may translate into a corresponding decrease in U.S. influence, which may have implications for the health of Brazil's democracy, regional stability and U.S. national security.

This thesis crafts, for the first time in the literature on Sino-Brazilian relations, an estimable empirical model that examines whether trade or investment influences UNGA voting behavior between these two nations; this is an improved methodology for evaluating this relationship as previous studies relied on simple correlations. This thesis makes five hypotheses, and tests them with two types of voting affinity measurements using both regression analysis and simple correlations. This thesis finds that Brazil's exports to China have a statistically significant, positive relationship, and U.S. aid has a statistically significant, negative relationship, to Sino-Brazilian voting affinity.

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LIST OF ACRONYMS AND ABBREVIATIONS

APEX	Brazilian Agency for Investment and Export Promotion
BRIC	Brazil, Russia, India, and China
CASS	Chinese Academy of Social Sciences
CCP	Chinese Communist Party
CCPIT	China Council for the Promotion of International Trade
CDB	Caribbean Development Bank
CINDES	Center for Integration and Development
COSBAN	High Level Coordination and Cooperation Committee
DOTS	Direction of Trade Statistics
DV	Dependent variable
FDI	Foreign Direct Investment
FEALAC	Forum for East Asia-Latin America-Cooperation
GDPPC	Gross Domestic Product Per Capita
IADB	Inter-American Development Bank (also IDB)
IFS	International Finance Statistics
ILO	International Labor Organization
IMF	International Monetary Fund
INPE	Brazilian National Space Research Institute
IV	Independent variable
MERCOSUR	Mercado Comum do Sul (in Portuguese) or Southern Common Market
MMX	Mineracao e Metalicos SA
MOFCOM	Ministry of Commerce, People's Republic of China
OAS	Organization of American States

OECD	Organization for Economic Cooperation and Development
OFDI	Outward Foreign Direct Investment
PRC	People's Republic of China
ROC	Republic of China (Taiwan)
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNGA	United Nations General Assembly
USAID	U.S. Agency for International Development
UNSC	United Nations Security Council
WDI	World Development Indicators
WISCO	Wuhan Iron and Steel Company
WRI	World Resources International
WTO	World Trade Organization

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I. INTRODUCTION

A. MAJOR RESEARCH QUESTION

This thesis examines whether Sino-Brazilian trade or investment significantly influences Brazil's voting in the United Nations General Assembly (UNGA). To examine this relationship, the thesis will regress a dataset of UNGA voting patterns, which the literature commonly uses to represent political influence, with trade and investment data.

B. IMPORTANCE

China's rise and subsequent expansion into new geographic areas, particularly that of Latin America, is of significant interest to the United States, both from an economic as well as from a security perspective. Of the Latin American nations, Brazil is the most important to China; Brazil is Latin America's most populous nation, has a growing economy and offers a large consumer base for Chinese products. Sino-Brazilian trade has expanded dramatically over the years and, in 2009, China overtook the United States as Brazil's number one trading partner. Given this expansion in trade, it is unsurprising that scholars and government analysts alike have begun to assess whether the Sino-Brazilian economic relationship has politically influenced Brazil.

The literature commonly uses United Nations General Assembly (UNGA) votes as a proxy for political influence or political compliance.¹² The UNGA arguably acts as a

¹ See, for example, Neil R. Richardson and Charles W. Kegley, Jr., "Trade Dependence and Foreign Policy Compliance: A Longitudinal Analysis," *International Studies Quarterly* 24, no. 2 (June 1980): 191–222. Others in the literature have examined the UNGA voting patterns of "aided nations" in an effort to measure "compliant behavior." See, for example, Bruce E. Moon, "The Foreign Policy of the Dependent State," *International Studies Quarterly* 27, no. 3 (September 1983): 315–340; and Adrienne Armstrong, "The Political Consequences of Economic Dependence," *Journal of Conflict Resolution* 25, no. 4 (September 1981): 401–428.

² Although international trade is a "mode of exchanging commodities and currencies," arguably "foreign policy behavior can also be considered an instrument of exchange;" in this case, foreign policy can be a "partial payment" for economic benefits; quoted in Neil R. Richardson and Charles W. Kegley, Jr., "Trade Dependence and Foreign Policy Compliance: A Longitudinal Analysis," *International Studies Quarterly* 24, no. 2 (June 1980): 198. If trade is asymmetric, whereby one country is (relatively speaking) more economically dependent than another (relatively) more dominant country, then the dependent country "can satisfy the obligation of the asymmetrical exchange by supporting the foreign policy of the dominant country," quoted in Richardson and Kegley (1980), 198–199. Political compliance, therefore, can result from an asymmetric economic relationship.

barometer for both the worldview and for the political tendencies of a nation. Understanding whether the growing Sino-Brazilian economic relationship politically impacts Brazil is important both to Brazil and to the United States. Analyzing the Sino-Brazilian relationship is also critical for the United States; any increase in Chinese influence on Brazil may translate into a corresponding decrease in U.S. influence.³ A decrease in U.S. influence may have implications for the health of Brazil's democracy, regional stability and U.S. national security. The research also will address to what degree, if any, U.S. military and economic assistance influences Brazil's voting affinity with both the United States and China. Given the United States ties its aid decisions to certain UNGA votes, it will be interesting to see the effect U.S. aid has on voting. Additionally, the research may offer insight into what changes, if any, the United States might make in its relations with Brazil in order to increase U.S.-Brazilian voting affinity or, if desirable, decrease Sino-Brazilian voting affinity.

C. PROBLEMS

Anecdotally, one might conclude that increased levels of Sino-Brazilian trade or investment would positively influence Brazil's voting patterns. Concerns over China's growing influence have appeared in numerous newspaper articles.⁴ On the other hand, Brazilian politicians have stated their independence from China. These anecdotes suggest that determining the direction and significance of the relationship without empirical evidence is not fruitful. If Sino-Brazilian trade or investment influences Brazil's voting patterns, then the United States may want to focus its attention on strengthening its own economic relationship with Brazil and should be concerned with the Sino-Brazilian economic relationship. On the other hand, if there is no significant relationship (or it is

³ This could, in fact, result in a change in influence for the European Union. This thesis, however, is concerned with the change in influence for the United States.

⁴ See, for example, John Pomfret, "China Invests Heavily in Brazil, Elsewhere in Pursuit of Political Heft," *The Washington Post*, July, 26, 2010; Sara Lana and Andrew Downie, "In Brazil, Hu Jintao Aims for Bigger Piece of Latin America Trade," *The Christian Science Monitor*, April 15, 2010; Andrés Cala, "China Grabs Latin America, Well Ahead of Obama's Outreach," *The Christian Science Monitor*, March, 21, 2011; James Morrison, "Chinese Power," *The Washington Times*, May 11, 2005, World, Embassy Row, Page A15; Humphrey Hawksley, "Chinese Influence in Brazil Worries US," BBC News, April 3, 2006.

negative), then perhaps the United States should temper its concern over the Sino-Brazilian economic relationship and should pursue other means to politically influence Brazil.

The findings presented in this thesis offer an improved methodology for evaluating the relationship between voting affinity and trade; previous studies relied on simple correlations to discuss this relationship. This thesis crafts, for the first time in the literature on Sino-Brazilian relations, an estimable empirical model that examines whether trade or investment influences UNGA voting behavior between these two nations. The main variables appearing in the econometric model are as follows: UNGA votes, Foreign Direct Investment (FDI), trade, and U.S. aid. Although the model is an improvement over past analyses, it is not without its own econometric issues. Given that the thesis employs time series data from different countries, it needs to address heteroscedasticity and serial correlation. Thus, the thesis uses the Breusch-Pagan / Cook Weisberg test for heteroscedasticity and the Durbin-Watson Statistic to test for the presence of autocorrelation in the residuals. Chapter IV, Results, reports the results of these tests and discusses what they mean in terms of the thesis. Ultimately, the thesis determines that heteroscedasticity and autocorrelation are present.

D. HYPOTHESES

This thesis makes five hypotheses, and tests them with two types of voting affinity measurements for both regression analysis and simple correlations. All else being equal, this thesis hypothesizes the following: (1) a change in the level of exports from Brazil to China, as measured by the ratio of Brazilian exports to China to total Brazilian exports, may significantly influence Brazil's UNGA voting affinity with China; (2) a change in the level of imports from China to Brazil, as measured by the ratio of Brazilian imports from China to total Brazilian imports, may significantly influence Brazil's UNGA voting affinity with China; (3) a change in the level of Chinese FDI to Brazil, as measured by the ratio of Chinese FDI to total FDI in Brazil, may significantly influence Brazil's UNGA voting affinity with China; (4) a change in the level of U.S. aid to Brazil, as measured by U.S. economic and military aid to Brazil, may significantly influence

Brazil's UNGA voting affinity with China; and (5) a change in the level of U.S. aid to Brazil, as measured by U.S. economic and military aid to Brazil, may significantly influence Brazil's UNGA voting affinity with the United States.

E. FINDINGS

Based on the results of the regression analysis, this thesis rejects the null hypothesis (1), that a change in the level of exports from Brazil to China, as measured by the ratio of Brazilian exports to China to total Brazilian exports, may significantly influence Brazil's UNGA voting affinity with China. It appears that Brazil's exports to China have a statistically significant, positive relationship to Sino-Brazilian voting affinity. Due to a lack of statistically significant results, however, this thesis fails to reject hypothesis (2), that, all else being equal, a change in the level of imports from China to Brazil, as measured by the ratio of Brazilian imports from China to total Brazilian imports, may significantly influence Brazil's UNGA voting affinity with China. (3) Given a distinct lack of available data on Chinese FDI into Brazil, dropping FDI from the regression became necessary to reach a sufficient number of observations to run the econometric model. Given the lack of sufficient observations, this thesis used simple correlation to analyze the relationship between Chinese FDI into Brazil and Sino-Brazilian voting affinity. The correlations suggest that there is a weak, negative relationship between Chinese FDI into Brazil (as a percentage of Brazil's total inward FDI) for the primary method of Sino-Brazilian voting affinity. A weak, positive correlation, however, exists between the secondary measure of Sino-Brazilian voting affinity and Chinese FDI into Brazil (as a percentage of Brazil's total inward FDI). This thesis was able to reject the null hypothesis (4), that a change in the level of U.S. aid to Brazil, as measured by U.S. economic and military assistance to Brazil, may significantly influence Brazil's UNGA voting affinity with China; the results suggests that U.S. military and economic assistance to Brazil have a negative, statistically significant relationship to Sino-Brazilian voting affinity. The thesis fails to reject the null hypothesis (5), that a change in the level of U.S. aid to Brazil, as measured by U.S. economic and military assistance to Brazil, may significantly influence Brazil's UNGA voting affinity with the United States, due to a lack of statistically significant results.

F. CONCLUSIONS

As far as this thesis is aware, the literature contains no other empirical evidence to indicate that Brazil is more likely to vote with China as a result of increased trade with China. An increase in Brazil's exports to China, as a percentage of Brazil's total exports, the more likely Brazil is to vote in accordance with China in the UNGA. This thesis also confirms what has appeared previously in the literature, that U.S. foreign aid (in this thesis, military and economic assistance) also appears to impact voting affinity. An increase in U.S. economic and military assistance to Brazil indicates that Brazil is less likely to vote the same as China in the UNGA. These findings suggest that if the United States wants to decrease the voting affinity Brazil shares with China, it should increase its military and economic assistance to Brazil. While this may not be a policy goal for the United States, at the moment, being aware of this relationship may yet serve U.S. national security interests.

Although not one of the five main hypotheses presented, this thesis also discovered that an increase in U.S. exports to Brazil (or an increase in Brazil's imports from the United States), increases the likelihood that Brazil will vote in accordance with the United States in the UNGA. In contrast, an increase in U.S. imports from Brazil (or an increase in Brazil's exports to the United States) decreases the likelihood that Brazil will vote with the United States in the UNGA. These findings suggest that if the United States wants to increase its voting affinity with Brazil, the United States should exports more to Brazil and import less from Brazil. Again, this increased U.S.-Brazilian voting affinity may not be a policy goal of the United States, but this understanding may help the United States achieve future regional policy goals. Brazil is an important regional player with a growing economy, thus it may behoove the United States to better understand what impacts its UNGA votes.

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II. REVIEW OF THE LITERATURE

A. INTRODUCTION

While the logrolling literature strongly suggests that politicians trade votes on important issues,⁵ the literature lacks consensus as to whether a similar pattern of behavior exists between states. The UNGA offers a potential venue for exploring whether countries engage in strategic behavior with respect to economic and political decisions. The UN is unique among international organizations in that each member has one vote in the UNGA; thus, nations may merely express their preferences when voting on UNGA resolutions.⁶ On the other hand, UNGA votes may be a reflection of economic incentives among nation states, in essence, vote buying at the level of the state.⁷

This literature review is presented in five remaining sections, which attempt to address the main research objectives of this thesis: the determinants of UNGA voting and whether the growing Sino-Brazilian economic relationship, as measured by Chinese trade and Chinese FDI, influences Brazil's UNGA votes. If there is consensus in the literature as to whether trade or investment from a country significantly influences the voting

⁵ See the following works for an analysis of voting in the U.S. Congress: Lawrence S. Rothenberg and Mitchell S. Sanders, "Legislator Turnout and the Calculus of Voting: The Determinants of Abstention in the U.S. Congress," *Public Choice* 103, nos. 3–4 (2000): 259–270; Steven D. Levitt, "How Do Senators Vote? Disentangling the Role of Voter Preferences, Party Affiliation, and Senator Ideology," *American Economic Review* 86, no. 3 (June 1996): 425–441; and James M. Snyder, Jr. and Tim Groseclose, "Estimating Party Influence in Congressional Roll-Call Voting," *American Journal of Political Science* 44, no. 2 (April 2000): 193–211.

⁶ See the following: Erik Gartzke, "Kant We All Just Get Along?" *American Journal of Political Science* 42, no. 1 (January 1998): 1–27; Bruce Russett and John Oneal, *Triangulating Peace: Democracy, Interdependence, and International Organizations*. (New York, NY: Norton, 2001); Randall W. Stone, "The Political Economy of IMF Lending in Africa." *American Political Science Review* 98, no. 4 (November 2004): 577–591, as cited in David B. Carter and Randall W. Stone, "Sincere or Strategic? U.S. Aid Disbursements and Voting in the United Nations General Assembly" (paper prepared for presentation at the 4th annual conference of The Political Economy of International Organizations, Zurich, Switzerland, January 28, 2011).

⁷ See Eugene R. Wittkopf, "Foreign Aid and United Nations Votes: A Comparative Study," *The American Political Science Review* 67, no. 3 (September 1973): 868–888. Also see the following: Kul B. Rai, "Foreign Aid and Voting in the UN General Assembly, 1967–1976," *Journal of Peace Research* 17, no. 3 (September 1980): 269–277; Charles W. Kegley, Jr. and Steven W. Hook, "U.S. Foreign Aid and UN Voting: Did Reagan's Linkage to Strategy Buy Deference or Defiance?" *International Studies Quarterly* 35, no. 3 (September 1991): 295–312; T.Y. Wang, "U.S. Foreign Aid and UN Voting: An Analysis of Important Issues," *International Studies Quarterly* 43, no. 1 (March 1999): 199–210, as cited in Carter, 2011.

behavior of the recipient country, then this thesis need not empirically evaluate this claim. On the other hand, if disagreement exists in the literature regarding the determinants of UNGA voting, then it strengthens the motivation for this thesis; this thesis will not only empirically examine whether trade and FDI influences UNGA voting, but it will also present a detailed analysis of Chinese FDI in, and trade with, Brazil.

B. A BRIEF REVIEW OF THE UN AND VOTING IN THE UNGA

In this section, this thesis examines the structure of the UN and, more importantly, how the UN establishes the agenda for UNGA votes. This thesis also discusses whether political influence prior to the final UNGA votes is important, and critiques the literature regarding UNGA votes and observable outcomes.

1. A Brief History of the UNGA

Few things are more politically salient to the People's Republic of China (PRC) than the issue of the one-China policy; it guides the PRC's global political (and even economic) relations and is a major source of friction in the region.⁸ While the PRC supports the one-China policy, both the PRC and Taiwan believe that they are the legitimate government. Given the foundational history of the UN, however, this contention is quite understandable.

Following the conclusion of WWII, representatives of 50 countries met in San Francisco at the UN Conference on International Organization in 1945 to devise the UN Charter.⁹ Proposals previously drafted by representatives from China, the Soviet Union, the United Kingdom and the United States during a meeting at Dumbarton Oaks, United

⁸ The one-China policy is especially salient for Sino-U.S. and Taiwan-U.S. relations. On 1 January 1979, the United States officially recognized the PRC as the legitimate government of China, simultaneously severing diplomatic ties to Taiwan. See Shu-Cheng Lin, "The United States Recognition of the People's Republic of China: Implications for the International Status of the Republic of China" (master's thesis, Texas Tech University, 1983). With the passage of the 1979 Taiwan Relations Act, however, the United States agreed to provide Taiwan with "arms of a defensive character" and to "preserve and promote extensive, close, and friendly commercial, cultural, and other relations" (See Public Law 96-98 96th Congress "Taiwan Relations Act, January 1, 1979," American Institute in Taiwan, <http://www.ait.org.tw/en/taiwan-relations-act.html>) (accessed October 1, 2011).

⁹ United Nations. "History of the United Nations," <http://www.un.org/aboutun/unhistory/> (accessed September 17, 2011).

States, in August-October 1944, guided the deliberations in San Francisco.¹⁰ The representatives signed the Charter on 26 June 1945. China, France, the United Kingdom, the United States, the Soviet Union, and a majority of other signatories ratified the Charter on 24 October 1945, officially bringing the UN officially into existence.¹¹

While at the time of UN founding the Republic of China (ROC) occupied mainland China, the Communist takeover in October 1949 and the establishment of the PRC forced the ROC government to flee to Taiwan, where it instituted Taipei as the provisional capital in December 1949.¹² The founding of the PRC called into question UN representation. The United States supported keeping the ROC as the UN representative for China and actively worked to “prevent proposals calling for admission of the PRC and the expulsion of the ROC from being put ion [sic] the General Assembly agenda.”¹³ With the expansion of the UN to the Third World, however, which tended to side with the PRC, the ROC lost its UN seat in 1971.¹⁴ During the 26th Session of the GA, in the 1976 plenary meeting on 25 October 1971, the UNGA passed Resolution No. 2758 (XXVI):¹⁵ Restoration of the lawful rights of the People’s Republic of China in the United Nations, “Recognizing that the representatives of the Government of the People’s Republic of China are the only lawful representatives of China to the United Nations and that the People’s Republic of China is one of the five permanent members of the Security

¹⁰ United Nations. “History of the United Nations,” <http://www.un.org/aboutun/unhistory/> (accessed September 17, 2011).

¹¹ Ibid.

¹² BBC News. “Retreat to Taiwan,” http://news.bbc.co.uk/hi/english/static/in_depth/asia_pacific/2000/taiwan_elections2000/1949_1955.stm (accessed September 17, 2011).

¹³ Vincent Wei-cheng Wang, “How Can Taiwan Enter the United Nations? History, Issues, and Approaches” *Issues & Studies*, 30, no. 10 (October 1994): 108–131. See also, Vincent Wei-Chang Wang, “How Can Taiwan Enter the United Nations? History, Issues and Approaches,” Department of Political Science, University of Miami Coral Gables, Florida, https:// facultystaff.richmond.edu/~vwang/Publications/Can_Taiwan_Enter_UN.pdf (accessed September 17, 2011).

¹⁴ Ibid.

¹⁵ A total of 131 countries voted on the resolution, with Yes: 76, No: 35, Abstain: 17 and Non-voting: 3. See: United Nations Bibliographic Information System. Online at <http://unbisnet.un.org> (accessed 9/17/11). Both the United States and Brazil voted no on the Resolution.

Council.”¹⁶ The Resolution also decides to, “expel forthwith the representatives of Chiang Kai-shek from the place which they unlawfully occupy at the United Nations and in all organizations related to it.”¹⁷ With the Resolution’s passage, the PRC became the official representative and Taiwan lost its UN voice; Taiwan, to this day, disputes the Resolution as being in violation of the UN Charter.¹⁸

The 1945 UN Charter established the General Assembly (GA), one of five principal UN organs.¹⁹ The General Assembly (GA) “occupies a central position as the chief deliberative, policymaking and representative organ” of the UN (General Assembly).²⁰ The GA consists of all 193 members of the UN, which “provides a unique forum for multilateral discussion of the full spectrum of international issues covered by the Charter. It also plays a significant role in the process of standard-setting and the codification of international law.”²¹ The GA meets in regular session “commencing on the Tuesday of the third week in September, counting from the first week that contains at least one working day”²² (the 66th session opened in September of 2011) and typically lasting through December; the GA also convenes special and emergency special sessions in accordance with the Rules of the Procedure of the GA.²³ The UNGA oversees the UN

¹⁶ United Nations. “United Nations Resolution No. 2758. Resolutions Adopted by the General Assembly at its 26th Session,” United Nations Documentation: Research Guide, <http://www.un.org/Depts/dhl/resguide/r26.htm> (accessed September 17, 2011).

¹⁷) Ibid.

¹⁸ Vincent Wei-cheng Wang, “How Can Taiwan Enter the United Nations? History, Issues, and Approaches” *Issues & Studies*, 30, no. 10 (October 1994): 108–131. See also, Vincent Wei-Chang Wang, “How Can Taiwan Enter the United Nations? History, Issues and Approaches,” Department of Political Science, University of Miami Coral Gables, Florida, https:// facultystaff.richmond.edu/~vwang/Publications/Can_Taiwan_Enter_UN.pdf (accessed September 17, 2011).

¹⁹ The other four organs are, the Security Council, an Economic and Social Council, Secretariat, International Court of Justice. The original charter established six organs, but the Trusteeship Council suspended operations in 1994.

²⁰ United Nations. “Functions and Powers of the General Assembly,” General Assembly of the United Nations, <http://www.un.org/en/ga/about/background.shtml> (acccesSED September 15, 2011).

²¹ Ibid.

²² United Nations. “Rules of Procedure of the United Nations,” <http://daccess-dds-ny.un.org/doc/UNDOC/GEN/N08/233/16/PDF/N0823316.pdf> (accessed September 17, 2011).

²³ Ibid.

budget, appoints non-permanent members of the Security Council, receives and considers reports from other UN organs and makes recommendations in the form of GA Resolutions.

A UNGA resolution is an opportunity for GA members to explicitly state their country's position on a specific question. If a country's foreign policy depends on a bilateral economic relationship, then a country can express this through a UNGA vote. As UNGA resolutions are not spontaneous affairs, the next subsection discusses how the UNGA sets its agenda.

2. UNGA Voting: Agenda Setting and Voting Mechanisms

The UNGA plans the agenda up to seven months before the start of a session, beginning with a preliminary list of items and followed by a provisional agenda, which the UNGA issues at least 60 days before the opening of the session.²⁴ The Secretary-General then submits a memorandum to the General Committee, which "provides background information on the organization of the session, consolidates the information relating to the provisional agenda and proposes the allocation of the agenda items to either the plenary or one of the Main Committees."²⁵ Following the session's start, UNGA adopts a final agenda in a plenary meeting and allocates the work to Main Committees; the Main Committees then submit reports to the GA for consensus or for a vote.²⁶

Each Member of the GA has one vote and "votes taken on designated important issues, such as recommendations on peace and security and the election of Security Council members, require a two-thirds majority of Member States, but other questions are decided by simple majority."²⁷ Increasingly, UN Members have made efforts to reach consensus on issues, rather than coming to a decision by formal vote; this subsequently strengthens the support for the Assembly's decisions. If the President, after consulting

²⁴ United Nations. "General Assembly: Parliamentary Documents," United Nations Documentation: Research Guide, <http://www.un.org/Depts/dhl/resguide/gasess.htm#gaagen> (accessed September 17, 2011).

²⁵ Ibid.

²⁶ Ibid.

²⁷ Ibid.

with delegations, reaches an agreement, he can propose that the GA adopt a resolution without a vote.²⁸ Thus, the GA adopts the majority of its resolutions without a vote. If the GA does vote, however, it documents it either as a recorded vote, or as a summary of the result.²⁹ “Only a recorded vote, which must be requested before the voting is conducted, will clearly identify that stand that a Member State took on the issues under discussion. If such a request is not put forth, only the voting summary (i.e., the number of countries which voted for and against a resolution as well as those who abstained) will be made available without the identification of how a Member State voted.”³⁰ The UN makes unofficial voting information accessible through a press release following the meeting’s conclusion.³¹ Official voting information is available through the record of the meeting at which the vote occurred.³² The Main Committees of the GA also conduct votes; the meeting records of the Committees as well as the reports that the Committees submit to the plenary on each agenda item contain a record of the Committee votes.³³ Although UN Resolutions serve as “non-binding recommendations to States on international issues within its competence, it has, nonetheless, initiated actions—political, economic, humanitarian, social and legal—which have affected the lives of millions of people throughout the world.”³⁴

Before delving into the arguments common to the UNGA voting literature, this review would be remiss should it ignore an existing debate surrounding the efficacy of using UNGA voting patterns as an indicator of political influence or political compliance. While the literature exhibits few reservations about using UNGA voting patterns in such

²⁸ United Nations. “Functions and Powers of the General Assembly,” General Assembly of the United Nations, <http://www.un.org/en/ga/about/background.shtml> (accessed September 15, 2011).

²⁹ Ibid.

³⁰ United Nations. “General Assembly: Parliamentary Documents,” United Nations Documentation: Research Guide, <http://www.un.org/Depts/dhl/resguide/gasess.htm#gaagen> (accessed September 16, 2011).

³¹ Ibid.

³² Ibid.

³³ Ibid.

³⁴ United Nations. “Functions and Powers of the General Assembly,” General Assembly of the United Nations, <http://www.un.org/en/ga/about/background.shtml> (accessed September 15, 2011).

a manner, some scholars object to their use.³⁵ Keohane, for example, maintains that focusing simply on the UNGA voting patterns themselves does not “provide us with comprehensive knowledge of General Assembly politics.”³⁶ Further, a “sophisticated and accurate statistical analysis will indicate alignments and may provide clues to bargaining processes underlying them, but it does not yield detailed and relevant information about those processes.”³⁷ Keohane’s point is plain; if individual members can affect the UNGA’s political process, which he defines as “the interactions between delegations and Secretariat members through which General Assembly decisions are reached,”³⁸ then it is possible that they can impact “the choices with which the General Assembly is faced.”³⁹ In other words, internal UNGA politics can determine on what the UNGA ultimately votes; for this reason, focusing solely on the voting patterns themselves may ignore the bigger picture.⁴⁰

Although these objections may be justifiable, attempting to address this point, however, is problematic for several reasons. First, analyzing the internal politics at play within the UNGA may require, according to Keohane, relaxing the “standards of quantitative precision” that the voting data itself offers.⁴¹ If the data itself is imprecise, then its usefulness may be questionable. Second, the approach would be incredibly labor intensive and would necessitate “extensive interviewing of national representatives as well as careful analysis of the official record and the clues it provides, to discover who

³⁵ See, for example, Robert O. Keohane, “The Study of Political Influence in the General Assembly,” *International Organization* 21, no. 2 (Spring 1967): 221–237; Brian W. Tomlin, “Measurement and Validation: Lessons From the Use and Misuse of UN General Assembly Roll-call Votes,” *International Organization* 39, no. 1 (Winter 1985): 189–206.

³⁶ Robert O. Keohane, “The Study of Political Influence in the General Assembly,” *International Organization* 21, no. 2 (Spring 1967): 221.

³⁷ Ibid., 221.

³⁸ Ibid., 222.

³⁹ Ibid., 223.

⁴⁰ See, for example, Barry B. Hughes, “Transaction, Data and Analysis: In Search of Concepts,” *International Organization* 26, no. 4 (Autumn 1972): 559–680.

⁴¹ Robert O. Keohane, “The Study of Political Influence in the General Assembly,” *International Organization* 21, no. 2 (Spring 1967): 226.

was active, in what ways, and with what effect.”⁴² To date, none in the literature have amassed this data.⁴³ Third, it remains quite possible that the internal processes impacting on what the United Nations’ votes do not appear in any type of documentation; it is plausible that conversations amongst delegates, that in turn impact on what the UNGA votes, are not subject to official record. At the same time, relying on member interviews for such data assumes that members openly and honestly communicate their desires.

Focusing on the internal politics of the UNGA also overlooks the inherent value of the UNGA votes themselves.⁴⁴ Examining UNGA votes is useful for a variety of reasons. First, the UNGA has an almost universal membership with equal representation (one country, one vote). Second, UNGA voting dates back to 1946, which yields an abundance of data over a significant length of time; this no doubt increases the robustness of analysis using UNGA voting data. Third, this thesis does not seek to measure the internal politics (or inputs) behind UNGA voting; rather this study focuses on the outcome of the votes themselves. Furthermore, the error term of the model appearing in

⁴² Robert O. Keohane, “The Study of Political Influence in the General Assembly,” *International Organization* 21, no. 2 (Spring 1967): 226

⁴³ No such dataset appeared in an extensive review of the literature. Compiling such a dataset is beyond the scope of this thesis.

⁴⁴ The United States itself has demonstrated its belief in the significance of the UNGA voting. In 1983, the 98th Congress enacted Public Law (PL) 98–151 requiring the Permanent Representative of the United Nations to the United States to issue a report detailing the degree of support for the foreign policy of the United States as exhibited by a comparison of the voting practices on issues of major importance to the United States in the General Assembly and Security Council; PL 98–151 also prohibits the disbursement of appropriated funds to countries “engaged in a consistent pattern of opposition to the foreign policy of the United States” – see: Government Printing Office. “Public Law (PL) 98–151” Enacted During the First Session of the Ninety-Eighth Congress of the United States of America, <http://www.gpo.gov/fdsys/pkg/STATUTE-097/pdf/STATUTE-097-1-2.pdf> (accessed June 13, 2011). Similarly, PL 98–164 requires the Secretary of State to submit a report “regarding the policies which each member country of the United Nations pursues in international organizations of which the United States is a member. The report shall describe generally each country’s foreign policies as reflected in its activities in international organizations [such as the UNGA] and shall detail their respective positions on major issues of interest to the United States, including key decisions relating to the budget of international organizations” – see: Government Printing Office. “PL 98–164” Public Laws Enacted During the First Session of the Ninety-Eighth Congress of the United States of America, <http://www.gpo.gov/fdsys/pkg/STATUTE-097/pdf/STATUTE-097-1-2.pdf> (accessed June, 13 2011). Furthermore, the first such report, pursuant to PLs 98–151 and 98–164, U.S. Permanent Representative to the United Nations, Jeane J. Kirkpatrick, indicated that UN votes matter for the following reasons: “1. UN votes determine the policy of the UN bodies; 2. UN votes focus world attention; 3. UN votes define world opinion on many issues; 4. UN votes affect U.S. foreign policy” – see: U.S. Department of State. “Voting Practices in the United Nations: A Yearly Analysis by the Department of State.” United Nations Collection of Princeton University Library. United Nations Depository Library No. 007, <http://www.princeton.edu/%7Esbwhite/un/1983-I.pdf> (accessed June, 13 2011).

Chapter III, Data and Methodology, will capture any internal UNGA politics that may sway the voting outcome. For these reasons, this thesis uses UNGA voting patterns as an acceptable measure of political influence.

C. A BRIEF REVIEW OF THE LITERATURE ON THE DETERMINANTS OF UNGA VOTING

The purpose of this section is to review the literature on the determinants of UNGA voting to ascertain whether consensus exists as to what variables influence UNGA voting patterns. The literature, for example, has to some degree addressed the following: the impacts of an asymmetrical economic relationship, where a stronger nation's economic interactions influence the compliance of a weaker state as exhibited by UNGA voting;⁴⁵ whether countries who are economically dependent on another nation form alliances that sway their UNGA vote, or if alliances already in existence generate an economic relationship;⁴⁶ the impact of U.S. aid and various international organizations, such as the International Monetary Fund (IMF) and World Bank, on UNGA voting;⁴⁷ and, the influence of ideology on UNGA voting pattern.⁴⁸ This thesis surveys the existing evidence in the following subsections.

⁴⁵ See, for example, Bruce E. Moon, "The Foreign Policy of the Dependent State," *International Studies Quarterly* 27, no. 3 (September 1983): 315–340; Adrienne Armstrong, "The Political Consequences of Economic Dependence," *Journal of Conflict Resolution* 25, no. 4 (September 1981): 401–428; Neil R. Richardson and Charles W. Kegley, Jr., "Trade Dependence and Foreign Policy Compliance: A Longitudinal Analysis," *International Studies Quarterly* 24, no. 2 (June 1980): 191–222; Benjamin O. Fordham, "Trade and Asymmetric Alliances," *Journal of Peace Research* 47, no. 6 (November 2010): 685–696; Neil R. Richardson, "Political Compliance and U.S. Trade Dominance," *The American Political Science Review* 70, no. 4 (December 1976): 1098–1109; Joe D. Hagan, "Domestic Political Regime Changes and Third World Voting Realignments in the United Nations, 1946–84," *International Organization* 43, no. 3 (Summer 1989): 505–541.

⁴⁶ See, for example, Neil R. Richardson, "Political Compliance and U.S. Trade Dominance," *The American Political Science Review* 70, no. 4 (December 1976): 1098–1109; William J. Dixon and Bruce E. Moon, "Political Similarity and American Foreign Trade Patterns," *Political Research Quarterly* 46, no. 1 (March 1993): 5–25.

⁴⁷ See, for example, Axel Dreher and Jan-Egbert Sturm, "Do IMF and World Bank Influence Voting in the UN General Assembly?" CESifo Working Paper no. 1724 (May 2006): 1–40; Axel Dreher, Peter Nunnenkamp and Rainer Thiele, "Does U.S. Aid buy UN General Assembly Votes? A Disaggregated Analysis," *Public Choice* 136, nos. 1–2 (2008): 139–164.

⁴⁸ Niklas Potrafke, "Does Government Ideology Influence Political Alignment With the U.S.? An Empirical Analysis of Voting in the UN General Assembly," *The Review of International Organizations* 4, no. 3 (September 2009): 245–268.

1. The Effects of Asymmetrical Economic Relationships

As previously mentioned, several in the literature explore the impacts of an asymmetrical economic relationship on political compliance; many of these authors characterize the relationship in terms of dependency theory.⁴⁹ Some in the literature⁵⁰ for example, explore whether patterns exist in the case of asymmetrical influence employed by dominant countries such as the United States. The thought is that countries that are more economically dependent on the United States should exhibit “greater voting agreement,”⁵¹ in terms of their UNGA votes, with the United States than with other nations. The logic stems from the idea that a smaller country generally has a higher dependence on foreign trade for its exports and thus can become export dependent on the United States.⁵² “Because the larger economy dominates the smaller one through their mutual trade, the latter will be constrained to exhibit “cooperative” behavior born of economic dependence; it should behave deferentially.”⁵³ Consequently, given the importance of the United States as a market for their goods, a nation with a small economy might be inclined to vote in way that is in line with the United States, and thus form an alliance in order to preserve that crucial trade relationship.

⁴⁹ See, for example, Bruce E. Moon, “The Foreign Policy of the Dependent State,” *International Studies Quarterly* 27, no. 3 (September 1983): 315–340; Adrienne Armstrong, “The Political Consequences of Economic Dependence,” *Journal of Conflict Resolution* 25, no. 4 (September 1981): 401–428; Neil R. Richardson and Charles W. Kegley, Jr., “Trade Dependence and Foreign Policy Compliance: A Longitudinal Analysis,” *International Studies Quarterly* 24, no. 2 (June 1980): 191–222; Benjamin O. Fordham, “Trade and Asymmetric Alliances,” *Journal of Peace Research* 47, no. 6 (November 2010): 685–696; Neil R. Richardson, “Political Compliance and U.S. Trade Dominance,” *The American Political Science Review* 70, no. 4 (December 1976): 1098–1109; Joe D. Hagan, “Domestic Political Regime Changes and Third World Voting Realignments in the United Nations, 1946–84,” *International Organization* 43, no. 3 (Summer 1989): 505–541.

⁵⁰ See, for example, Bruce E. Moon, “The Foreign Policy of the Dependent State,” *International Studies Quarterly* 27, no. 3 (September 1983): 315–340; Adrienne Armstrong, “The Political Consequences of Economic Dependence,” *Journal of Conflict Resolution* 25, no. 4 (September 1981): 401–428; Neil R. Richardson and Charles W. Kegley, Jr., “Trade Dependence and Foreign Policy Compliance: A Longitudinal Analysis,” *International Studies Quarterly* 24, no. 2 (June 1980): 191–222; Neil R. Richardson, “Political Compliance and U.S. Trade Dominance,” *The American Political Science Review* 70, no. 4 (December 1976): 1098–1109.

⁵¹ Neil R. Richardson, “Political Compliance and U.S. Trade Dominance,” *The American Political Science Review* 70, no. 4 (December 1976): 1098.

⁵² Ibid.,1099.

⁵³ Ibid.,1099.

While the literature has certainly observed the dependency phenomenon to a degree, it does not entirely explain divergence in voting patterns. Some in the literature,⁵⁴ for example, determined that countries dependent on the United States had a higher level of compliance in terms of UNGA vote on issues that they perceived had greater salience for the United States (e.g., the Soviet Union in the cold war era).⁵⁵ In this manner, the literature has expanded dependency theory to examine alternative influences, at play in the complexity of UNGA voting.

2. Implications of Ideology

Perhaps building on Richardson's earlier work, Niklas Potrafke explored whether government ideology, not unlike the U.S. stance during the Cold War period, influenced UNGA voting alignment.⁵⁶ Potrafke discovered that, "leftwing governments were less sympathetic with U.S. positions" and that they opposed voting with the United States when the United States had a Republican president.⁵⁷ This study has potential implications for the interactions of Brazil and China; it is conceivable that Sino-Brazilian political ideology in some way influences their voting behavior. What remains unclear is how a nation's political ideology influences its economic relationship with others and whether staunch agreement (or dissention) on a subject will alter UNGA votes. A commonly purported Sino-Brazilian goal is to balance the influence of the United

⁵⁴ Neil R. Richardson, "Political Compliance and U.S. Trade Dominance," *The American Political Science Review* 70, no. 4 (December 1976): 1098–1109; Neil R. Richardson and Charles W. Kegley, Jr., "Trade Dependence and Foreign Policy Compliance: A Longitudinal Analysis," *International Studies Quarterly* 24, no. 2 (June 1980): 191–222.

⁵⁵ The Untied States "ascribed great importance to its cold war relationship with the Soviet Union," see Neil R. Richardson, "Political Compliance and U.S. Trade Dominance," *The American Political Science Review* 70, no. 4 (December 1976): 1101.

⁵⁶ Niklas Potrafke, "Does Government Ideology Influence Political Alignment With the U.S.? An Empirical Analysis of Voting in the UN General Assembly," *The Review of International Organizations* 4, no. 3 (September 2009): 245–268.

⁵⁷ Ibid., 263.

States;⁵⁸ while Potrafke may raise awareness as to ideology's impact on UNGA voting, it does precious little to discern whether this aspiration would, in turn, sway Brazilian voting patterns.

3. Which Came First, the Alliance, or the Trade?

While most scholars examining the relationship between alliances and international trade have found that alliances influence trade relations,⁵⁹ others in the literature reverse the analysis of the causal flow. William Dixon and Bruce Moon, for example, discover that the political factors influence U.S. export patterns.⁶⁰ At a basic level, a shared political philosophy and foreign policy, they argue, positively influences market penetration.⁶¹ Thus, political agreement fosters a stronger trade relationship. Benjamin Fordham, however, maintains that, “the benefit a state receives from commerce gives its leaders a motive to form alliances with their trading partners.”⁶² According to Fordham’s logic, once two nations have an economic relationship, they are thereby compelled to protect it by forming an alliance. While the two authors might appear to be in direct contrast to one another, their arguments are subtly different. Dixon and Moon focus more on specific political factors determine trade patterns, while Fordham centers on asymmetric alliances between a weak and a strong power and that alliance’s subsequent effect on international trade.⁶³

⁵⁸ See, for example, Jerry Harris, “Emerging Third World Powers: China, India and Brazil,” *Race & Class* 46, no. 3 (January 2005): 7–27 and Jorge Dominguez, “China’s Relations With Latin America: Shared Gains, Asymmetric Hopes,” Inter-American Dialogue Working Paper (2006): 1–59.

⁵⁹ Neil R. Richardson, “Political Compliance and U.S. Trade Dominance,” *The American Political Science Review* 70, no. 4 (December 1976): 1098–1109.

⁶⁰ William J. Dixon and Bruce E. Moon, “Political Similarity and American Foreign Trade Patterns,” *Political Research Quarterly* 46, no. 1 (March 1993): 5–25.

⁶¹ Ibid.

⁶² Benjamin O. Fordham, “Trade and Asymmetric Alliances,” *Journal of Peace Research* 47, no. 6 (November 2010): 685–696.

⁶³ While this thesis does not lag the data, future research may want to consider using this tool to address this issue statistically.

Another relevant branch of literature is whether outside aid influences UNGA voting patterns.⁶⁴ Given the size of the organizations and the enormity of U.S. aid, it is unsurprising that the vast majority of the literature centers on the IMF, the World Bank, and U.S. aid. A recent study by Axel Dreher, Peter Nunnenkamp, and Rainer Thiele, found robust evidence to support the claim that the United States “buys” the UNGA votes of aid recipients.⁶⁵ In presenting their own findings of the previous literature, the authors maintain that their disaggregated approach is an improvement on previous studies that “focus on the aggregate flows of aid.”⁶⁶ They claim that, “aid with few restrictions imposed on recipients is more effective in buying political support,”⁶⁷ for example, “general budget support and grants.”⁶⁸ Similarly, in an earlier study, Axel Dreher and Jan-Egbert Sturm found that countries that were recipients of funding from either the IMF or the World Bank were more likely to vote in the UNGA in line with the average G7 country.⁶⁹

Although the literature broadly discusses what may influence UNGA voting, the literature fails to specifically examine whether, and to what extent, trade or investment (either in terms of volume or composition) impacts a nation’s UNGA vote. Additionally, most of the literature is U.S. centric and therefore only considers how a nation votes in comparison to that of the United States.

4. Stylized Facts

The studies discussed in this section are important as these studies establish several stylized facts. First, U.S. aid significantly influences UNGA voting behavior.

64 See, for example, Axel Dreher and Jan-Egbert Sturm, “Do IMF and World Bank Influence Voting in the UN General Assembly?” CESifo Working Paper no. 1724 (May 2006): 1–40; Axel Dreher, Peter Nunnenkamp and Rainer Thiele, “Does U.S. Aid buy UN General Assembly Votes? A Disaggregated Analysis,” Public Choice 136, nos. 1–2 (2008): 139–164.

65 Axel Dreher, Peter Nunnenkamp and Rainer Thiele, “Does U.S. Aid buy UN General Assembly Votes? A Disaggregated Analysis,” Public Choice 136, nos. 1–2 (2008): 139–164.

66 Ibid.

67 Ibid., 141.

68 Ibid., 157.

69 Axel Dreher and Jan-Egbert Sturm, “Do IMF and World Bank Influence Voting in the UN General Assembly?” CESifo Working Paper no. 1724 (May 2006): 1–40.

Second an asymmetric economic relationship, characterized by the economic dependency of a smaller nation on a larger nation, affects UNGA voting. Third, ideology, especially in the context of an asymmetric relationship, impacts UNGA voting. Fourth, alliances influence trade volume.

D. A BRIEF REVIEW OF THE LITERATURE ON SINO-BRAZILIAN RELATIONS

This section of the thesis briefly reviews the evolution of Sino-Brazilian political and economic relations; it characterizes Sino-Brazilian relations and offers insight into the implications of this relationship for each nation. Following this, the thesis then examines the existing empirical evidence on whether Chinese trade with and investment in Brazil influences Brazil's UNGA voting patterns.

1. A Review of Sino-Brazilian Relations

Brazil, as the largest Latin American country,⁷⁰ is an attractive trading partner for China. Increased Sino-Brazilian trade has not only provided China with export markets and access to an abundant supply of natural resources, but it has also offered opportunities for expanded political ties between the two nations. Brazil has a growing economy and offers a large consumer base for Chinese products, making it the most important Latin American nation to China. Additionally, it has an ample supply of natural resources that are important to China's manufacturing sector, which is tied directly to China's economic security. China arguably also has emerged as one of the most important countries to Brazil. China provides Brazil with an ancillary market for its exports, allowing Brazil to diversify its trade. A diverse market, in Brazil's eyes, safeguards their economy against potential shocks associated with an overreliance on one

⁷⁰ Brazil is South America's largest country in terms of population, land mass and Gross Domestic Product (GDP).

market.⁷¹ Brazil also sees China as a key investor, at a time when the United States is distracted with multiple wars and economic crises.⁷²

Brazil's importance to China, and vice versa, while predominantly economic in nature, also appears to extend into the political realm. Sino-Brazilian political relations have been mutually beneficial, though arguably more so to China than to Brazil. Although the two nations are geographically and culturally distant, they remain developing countries with a "South-South" connection. Brazil and China wish to be recognized as legitimate, strong players in the global system, both politically and economically.⁷³ Moreover, both China and Brazil may aspire to balance the power of the United States, believing that a more proportionate power structure benefits their individual interests.

2. Characterizing Sino-Brazilian Economic Relations

Despite considerable geographic and cultural separation, the relationship between China and Brazil is far from recent history; in fact, relations between the two nations date back as far as the 1800s.⁷⁴ In 1974, Brazil was among the first of the Latin American countries to officially diplomatically recognize the PRC. This formal diplomatic

⁷¹ Brazil endeavors to balance its trade by splitting it in roughly comparable proportions. See: Jorge Dominguez, "China's Relations With Latin America: Shared Gains, Asymmetric Hopes," Inter-American Dialogue Working Paper (2006): 1–59. In fact, Brazilian President Luiz Inácio Lula da Silva said the following of Brazilian trade relations: "A few years ago, if the United States coughed, Brazil got pneumonia. Now we have diversified; we don't depend so much on one or two countries." See: Cristina Militi, "Brazil and the United States: Two Regional Superpowers Begin to Re-evaluate their Relations," Council on Hemispheric Affairs, (2008) <http://www.coha.org/brazil-and-the-united-states-two-regional-superpowers-begin-to-re-evaluate-their-relations/> (accessed December 10, 2009).

⁷² Tyler Bridges, "China Makes its Move As U.S. Falls Back in Latin America," *McClatchy Newspapers* (2009) <http://www.mcclatchydc.com/2009/07/08/71510/china-makes-its-move-as-us-falls.html> (accessed April 2, 2010).

⁷³ Jerry Harris, "Emerging Third World Powers: China, India and Brazil. *Race & Class* 46, no. 3 (August 2004): 7–27.

⁷⁴ Chinese tea first came to Brazil in 1810 and was mostly cultivated in the Botanical Garden. In order to assure the tea plantation's success, which was hoped to supply the European market, the Count of Linhares, Portugal's Prime Minister at the time, procured the immigration of several hundred Chinese colonists. See: James C. Fletcher, and Daniel P. Kidder. *Brazil and the Brazilians Portrayed in Historical and Descriptive Sketches [1829]*. (Ithaca, NY: Cornell University Press, 2010).

recognition furthered trade relations⁷⁵ between the two nations, a relationship that both characterizes and underpins the bulk of Sino-Brazilian interactions to this day. In 1993, Brazil became the first Latin American country to receive recognition from China as a strategic partner⁷⁶ Brazil reciprocated the recognition in referring to China as a strategic partner.⁷⁷ As China's global economic reach expanded, it undertook negotiations to enter the World Trade Organization (WTO). Following fifteen years of strained talks, China officially entered the WTO in 2001.⁷⁸

Despite the grueling negotiating process, China's entry, however, was not without its concessions. As part of its accession, China allowed nations to refrain from recognizing it as a market economy until 2016.⁷⁹ Brazil was again a frontrunner with respect to economic relations when, in 2004, it was among the first nations⁸⁰ to recognize

⁷⁵ In 1974, Brazil's imports from China, as a percentage of Brazil's total imports were at an almost nonexistent level of 0.004%. In 1993, this increased to 0.681%, rising to 1.41% in 1994, immediately following recognition. In 2008, imports were at 12.09%. In 1974, Brazil's exports to China, as a percentage of Brazil's total exports were at 0.238%. In 1993, this rose to 2.02% and dropped to 1.89% in 1994. In 2008, exports were at 8.29%.

⁷⁶ See, for example: R. Evan Ellis. *China in Latin America. The Whats and the Wheres*. (Boulder, CO: Lynne Rienner Publishers, 2009) and Wenran Jiang. "China and India Come to Latin America For Energy. Chapter 17 in *Energy cooperation in the Western Hemisphere. Benefits and impediments*, by Sidney Weintraub (ed.) Significant Issues Series 29, no 2. (Washington, D.C.: Center for Strategic and International Studies, 2007).

⁷⁷ A "strategic partnership" (arguably a soft power mechanism) involves the promotion of: economic relations, cultural awareness, shared political goals, global and regional security and mutual trust. China uses bilateral initiative on an informal level in order to limit its potential risks from more formal mechanisms. See: Kerry Dumbaugh. China's Foreign Policy: What Does It Mean For U.S. Global Interests? Washington, D.C.: Congressional Research Service (CRS) Report for Congress, RL34588, 2008.

⁷⁸ Jane Kirby. "China Enters WTO Fold," BBC News, Monday, September 17, 2001, <http://news.bbc.co.uk/2/hi/business/1548866.stm> (accessed April 3, 2010).

⁷⁹ China could, however, gain recognition as a market economy before the end of the period if it fulfilled the respective WTO member state's requirements for such recognition. See: World Trade Organization. "Accession of the People's Republic of China – Decision of 10 November." WT/L/432 (01–5996). Section 15(d). Price comparability in determining subsidies and dumping, (November 23, 2001).

⁸⁰ In 2004, New Zealand and Chile were the first, in the world and in the Latin American region, respectively, to recognize China as a market economy.

China as a market economy.⁸¹ Brazil's market economy recognition, in theory, would greatly benefit China, mainly because other nations' anti-dumping claims could be potentially more difficult to realize.⁸² Brazil's statement of China's market economy status not only directly benefitted China due to purported increased protection against anti-dumping claims, but it also saw expanded Sino-Brazilian trade, arguably aiding both Brazil and China.⁸³

a. An Expanding Relationship

China and Brazil's economic relationship includes the sharing of technology in many different realms, encompassing everything from the oil and manufacturing sectors to that of the aircraft and nuclear industries to space technology. Among these are projects with Petróleo Brasileiro (Petrobras), Brazil's state-owned oil company; Embraco, a Brazilian compressor manufacturer; Embraer, a Brazilian aircraft manufacturer; and the Brazilian National Space Research Institute (INPE), which directly

⁸¹ In a 2004 Memorandum of Understanding, Brazil recognized China as a market economy. Brazil, however, never declared China to be a market economy in its domestic law; some attribute this lack of institutionalization to stem from the Brazilian Government's disappointment in the level of Chinese investments in Brazil and China's unfulfilled promise of support for a permanent U.N. Security Council seat. In effect, Brazil behaves as if China does not have market economy status. See: International Bar Association. "Anti-dumping Investigations Against China in Latin America. The Non-market Economy Issue in Anti-dumping Investigations Against China in Latin America. (London, UK: International Bar Association Divisions Project Team, 2010).

⁸² China is arguably less able to defend its firms from anti-dumping claims made by countries that do not recognize it, or treat it, as a market economy. Initially, it was thought that Brazil would be less successful in pursuing anti-dumping claims against China; however, this has not rung true. Brazil's anti-dumping claims against China jumped dramatically from zero in 2005 to eleven in 2006, with nine claims resulting in final measures the following year. In 2009, however, Brazil put forth only one new investigation against China, and three cases where they took final measures, see International Bar Association. "Anti-dumping Investigations Against China in Latin America. The Non-market Economy Issue in Anti-dumping Investigations Against China in Latin America. (London, UK: International Bar Association Divisions Project Team, 2010). . It would appear initially that China stood to gain more from this recognition than did Brazil. While Brazil may have anticipated greater difficulty in putting forth anti-dumping measures on China, they hoped that their recognition of China as a market economy would solicit China's support in their bid for a permanent seat on the United Nations Security Council. I discuss Brazil's hopes for a U.N. Security Council seat in greater depth in the pages that follow.

⁸³ Brazil's imports from China, as a percentage of Brazil's total imports, were at 4.64% in 2003, 6.14% in 2004, and 12.09% in 2008. Brazil's exports to China, as a percentage of Brazil's total exports, were at 6.19% in 2003, 5.63% in 2004, and 8.29% in 2008.

contribute to Chinese FDI in Brazil. Additionally, collaboration in the nuclear and defense industries are expanding and one might expect this to become a growing source of FDI.

To support their economic relations, China and Brazil are progressively formalizing their partnership and creating both governmental and business infrastructure, which not only facilitate Chinese FDI in Brazil, but also Brazilian FDI into China. According to Ellis, “Brazil has a series of permanent coordinating mechanisms and a relatively well-developed government bureaucracy” to further its economic relationship with China.⁸⁴ The two nations have conducted high-level meetings to manage their strategic relationship. In 2006, for example, the High Level Coordination and Cooperation Committee (COSBAN) Commission, the main senior-level government coordinating body, met in Beijing to discuss the future of their strategic partnership.⁸⁵ Following this, in 2007, the two nations held the first “strategic dialogue” in São Paulo, which included “representatives from both countries’ governments and private sectors.”⁸⁶

Beyond official coordination methods, the Brazilian government also has the capacity to promote Brazilian companies that endeavor to engage in trade with China.⁸⁷ In 1736 Brazil established the Ministério das Relações Exteriores or Ministry of External Relations, which has offices in both Beijing and Shanghai.⁸⁸ Under the Ministry’s umbrella lies the Trade Promotion Department, which implements the “system of trade promotion.”⁸⁹ According to the Ministry’s website, their system of trade promotion is, “aimed at increasing Brazilian exports, publicizing investment

⁸⁴ R. Evan Ellis. *China in Latin America. The Whats and the Wheres*. (Boulder, CO: Lynne Rienner Publishers, 2009).

⁸⁵ Ministry of Foreign Affairs, People’s Republic of China, “Joint Communiqué Between the People’s Republic of China and The Federative Republic of Brazil on Further Strengthening China-Brazil Strategic Partnership,” May 19, 2009, <http://www.fmprc.gov.cn/eng/wjdt/2649/t566945.htm> (accessed April 7, 2010).

⁸⁶ R. Evan Ellis. *China in Latin America. The Whats and the Wheres*. (Boulder, CO: Lynne Rienner Publishers, 2009).

⁸⁷ Ibid.

⁸⁸ See Ministry of External Relations’ website at: <http://www.itamaraty.gov.br/>.

⁸⁹ According to the Ministry’s website, the Foreign Office Trade Promotion Department has three divisions, each with specific functions, and 52 Trade Promotions Sectors (known as “Secom’s”), located in embassies and consulates abroad.

opportunities and stimulating the transfer of technology and the flow of tourists into Brazil.”⁹⁰ Rodrigo Tavares Maciel, executive secretary of the Brazil-China Business Council, noted in a December 2007 phone interview with Sino-Latin American expert, R. Evan Ellis, that a gap exists between the availability of Brazilian government personnel and resources, in nearly all Brazilian trade promotion offices and embassies, and the demand of both Brazilian companies wanting to trade with China and Chinese companies looking to promote their business in Brazil exceeds available resources.⁹¹

Along with the Ministry of External Relations, Brazil has the Brazilian Agency for Investment and Export Promotion (APEX), which is an official organization geared towards promoting Brazil’s exports. In 2007, Dr. Alessandro Teixeira became the president of APEX and it was under his new leadership that, in 2009, APEX opened a Beijing office, APEX’s first in China.⁹² APEX also signed an agreement with the China Council for Promotion of International Trade (CCPIT) and APEX to promote bilateral trade.⁹³ APEX attended the 2010 Shanghai World Expo, which took place in Shanghai from 1 May to 31 October 2010 as part of the Brazilian pavilion.⁹⁴

Brazil’s capacity to promote trade with China, however, extends beyond the Brazilian government level; it also has a mature commercial infrastructure. Brazil boasts large, capable companies with many resources – such as Petrobras and Embraer, an aircraft manufacturer. Brazil also has a capable banking sector that has a growing interest in China.⁹⁵ Increasingly, Brazil has been involved in trade fairs, hosting its third Forum

⁹⁰ See: <http://www.itamaraty.gov.br/>.

⁹¹ R. Evan Ellis. *China in Latin America. The Whats and the Wheresores.* (Boulder, CO: Lynne Rienner Publishers, 2009).

⁹² *ApexBrasil.* “Brazil, A Clear Cut Choice of Investment During Economic Slump,” August 26, 2009, http://www.apexbrasil.com.br/portal_apex/publicacao/engine.wsp?tmp.area=149&tmp.texto=5991 (accessed April, 10 2010).

⁹³ R. Evan Ellis. *China in Latin America. The Whats and the Wheresores.* (Boulder, CO: Lynne Rienner Publishers, 2009).

⁹⁴ See: <http://en.expo2010.cn/hqindex.htm>.

⁹⁵ Relations between the two nations have expanding; Brazilian banks now have commercial offices located in China and Chinese banks have offices in Brazil. See: R. Evan Ellis. *China in Latin America. The Whats and the Wheresores.* (Boulder, CO: Lynne Rienner Publishers, 2009).

for East Asia-Latin America-Cooperation (FEALAC) in 2007.⁹⁶ In 2007, the number of chambers of commerce focused on China numbered 37.⁹⁷ Given mutual and increasing interest for conducting business between the two nations, and continued support from the private and public sectors alike, Sino-Brazilian economic relations will likely flourish into the future.

To further promote trade relations, both China and Brazil have witnessed increased intellectual advancements to facilitate shared mutual understanding. In the early 1960s, China opened the Institute of Latin American Studies, the “first Chinese organization devoted wholly to the study of Latin American affairs.”⁹⁸ Research efforts ceased during the Cultural Revolution, continuing 1976.⁹⁹ In 1981, the responsibility for the Institute shifted from the research arm of the Chinese Communist Party’s Liaison Department to the Chinese Academy of Social Sciences (CASS).¹⁰⁰ The Chinese Communist Party (CPC) established the Department for Studies about Latin America.¹⁰¹ Perhaps more importantly, however is the CPC’s endeavor to establish party-to-party relations to enhance state-to-state relations; today the CPC has ties with more than 20 political parties.¹⁰² These institutions foster research on a variety of Latin American countries and reward country specialists for their knowledge.¹⁰³

While Brazil’s top, and arguably most influential, think tank, Fundação Getulio Vargas,¹⁰⁴ has researched issues related to China, they appear to lack a partner

⁹⁶ The fourth forum took place in Tokyo, Japan in January 2010.

⁹⁷ R. Evan Ellis. *China in Latin America. The Whats and the Wheres*. (Boulder, CO: Lynne Rienner Publishers, 2009).

⁹⁸ Mark Sidel, “Latin American Studies in the People’s Republic of China. *Latin American Research Review* 18, no. 1 (1983): 143–153.

⁹⁹ Ibid.

¹⁰⁰ Ibid.

¹⁰¹ Jorge Dominguez, “China’s Relations With Latin America: Shared Gains, Asymmetric Hopes,” Inter-American Dialogue Working Paper (2006): 1–59.

¹⁰² Shixue Jiang, “The Chinese Foreign Policy Perspective. Chapter two in Riordan Roett and Guadalupe Paz, (eds). *China’s Expansion into the Western Hemisphere: Implications For Latin America and the United States*. (Washington, D.C.: The Brookings Institution, 2008).

¹⁰³ Jorge Dominguez, “China’s Relations With Latin America: Shared Gains, Asymmetric Hopes,” Inter-American Dialogue Working Paper (2006): 1–59.

¹⁰⁴ See the Fundação Getulio Vargas website: <http://www.fgv.br/>.

institute in China; this may hinder Brazil's understanding of China. The rapid expansion of Chinese language schools in Brazil and the mutual increased interest has also aided economic relations.¹⁰⁵ Despite efforts from both nations, polling data reveals that neither region knows much about the culture and business methodology of the other.¹⁰⁶ China and Brazil will likely bridge this educational and cultural gap over time, further escalating their economic interconnectedness. These linkages between the two nations will seep into the political realm and impact not only Sino-Brazilian relations, but also the interactions each nation has with the United States, and, on a larger scale, relations within the hemisphere.

3. Characterizing Sino-Brazilian Political Relations

While economic matters arguably characterize the preponderance of Sino-Brazilian relations, a discussion on their interactions would be remiss if it disregarded the important political component. Due to the interconnected nature of economics and politics, it is, at times, difficult to decipher the root motivation to Sino-Brazilian associations. And, what might be purely economic for one nation could be politically motivated for the other. That said, Brazil and China do share political aspirations. They both wish to be seen as important players in the global scene.¹⁰⁷ China often refers to a shared “South-South” connection to Brazil and supports, as does Brazil, the containment of the United States.¹⁰⁸ Both Brazil and China, along with Russia and India, are a part of

¹⁰⁵ See: Alexandre de Freitas Barbosa, “Brazil: Dances with Dragon. China’s Soft Power Drive Combined With Economic Interest Opens New Doors in Brazil,” *Yale Global*, December 1, 2009, <http://yaleglobal.yale.edu/content/brazil-dances-dragon> (accessed April 16, 2010). There are over 40 Chinese language schools in São Paulo alone.

¹⁰⁶ David Shambaugh, “China’s New Foray Into Latin America,” (Washington, D.C.: The Brookings Institution, 2010).

¹⁰⁷ Jerry Harris, “Emerging Third World Powers: China, India and Brazil,” *Race & Class* 46, no. 3 (January 2005): 7–27.

¹⁰⁸ See: Jerry Harris, “Emerging Third World Powers: China, India and Brazil,” *Race & Class* 46, no. 3 (January 2005): 7–27 and Jorge Dominguez, “China’s Relations With Latin America: Shared Gains, Asymmetric Hopes,” Inter-American Dialogue Working Paper (2006): 1–59.

the BRIC countries,¹⁰⁹ which have rising economies. BRIC countries may also have the incentive and ability to cooperate politically, which could them more collective global power; this, as of yet, appears largely unrealized.¹¹⁰

The two nations often exploit their economic relationship for individual or shared political gains. As previously mentioned, for example, China used its position as a permanent member of the U.N. Security Council to influence Brazil's 2004 decision to recognize China as a market economy. While China had the economic goal of achieving this status, in part to deflect Brazil's anti-dumping claims against China in the WTO, Brazil's motivations were predominantly political. Brazil believed that if it recognized China as a market economy, many years before the deadline of 2016, then China would support the growth of the U.N. Security Council to give Brazil a permanent seat with veto power.¹¹¹ It appears however that China may have misled Brazil as they later announced that they did not support the U.N. Security Council's expansion.¹¹² Thus what may have appeared to be an economically motivated move had both economic and political ramifications.

Just as Brazil's recognition of China's market economy blurred the line between the political and economic, arguably so too does China's official involvement in Latin American regional affairs. Although China has been engaged in Latin American

¹⁰⁹ Jim O'Neill of Goldman Sachs coined the term BRIC (Brazil, Russia, India, China) and stated that, "over the next 10 years, the weight of the BRICs and especially China in world GDP will grow, raising important issues about the global economic impact of fiscal and monetary policy in the BRICs" (O' Neil, 2001).

¹¹⁰ Joseph Nye, "What's in a BRIC? Not As Much As Many Observers Imagine," *The Daily Star*, May 14, 2010, http://www.dailystar.com.lb/article.asp?edition_id=10&category_id=5&article_id=114822#axzz0p2qWf4O4 accessed May 20, 2010.

¹¹¹ See, for example, R. Evan Ellis. *China in Latin America. The Whats and the Wheres*. (Boulder, CO: Lynne Rienner Publishers, 2009); David J. Lynch, "China's Growing Pull Puts Brazil in a Bind. *USA Today*, March 21, 2006, http://www.usatoday.com/money/world/2006-03-21-brazil-china-cov-usat_x.htm (accessed April 10, 2010); and Renato Baumann, "Some Recent Features of Brazil-China Economic Relations," United Nations Economic Commission for Latin America, April 2009, <http://www.cebc.org.br/sites/500/521/00001316.pdf> (accessed May 15, 2010).

¹¹² China opposes long-time rival Japan from having veto power in the UN Security Council; the United States opposes the same for Germany. See: *ABC News*. "China, US to Jointly Oppose UN Council Expansion," August 2, 2005, <http://www.abc.net.au/news/newsitems/200508/s1430656.htm> (accessed April 13, 2010).

economic and political affairs for quite some times, both the importance and weight of China's exploits have heightened in recent years. In 1993, China's relationship with the Latin American Parliament began, paving the way for further regional integration. For example, in 1998, China joined the Caribbean Development Bank (CDB); they received official observer status to the Organization of American States (OAS) in 2004 and became a non-borrowing member¹¹³ of the Inter-American Development Bank (IADB) in 2009. Although it may be difficult to clearly deduce whether Chinese participation in these organizations is for economic or political (or both) motivations, it lends a certain amount of legitimacy to China as a regional player.

4. Empirical Evidence on Whether Sino-Brazilian Trade or Investment Influences Brazil's UNGA Voting Pattern

Dominguez¹¹⁴ represents the main work addressing whether Sino-Brazilian trade or investment altered Brazil's UNGA voting pattern. While the Dominguez paper is highly relevant, the topic of China's influence on Brazil's UNGA vote appears in a relatively small section of a much larger Inter-American Dialogue¹¹⁵ paper. Dominguez argues that there is no statistically observable effect of the trade boom on Brazilian UNGA voting. First, and foremost, the Dominguez piece presents only correlations and does not address the issue of causality. This thesis uses a more robust analysis, which relies on multivariate regressions; thus, it can make causal inferences based upon the results. Second, Dominguez used his own UNGA voting data,¹¹⁶ and did not make them publicly available. For this reason, replicating his results is not possible at this time. Given these shortcomings, it would be fallacious to accept the conclusions that Dominguez derived without increasing the potency of analysis.

¹¹³ Non-borrowing members provide capital and have voting representation in the Bank's Board of Governors and Board of Executive Directors according to their capital subscriptions.

¹¹⁴ Jorge Dominguez, "China's Relations With Latin America: Shared Gains, Asymmetric Hopes," Inter-American Dialogue Working Paper (2006): 1–59.

¹¹⁵ For more information on the Inter-American Dialogue, please see:
http://www.thedialogue.org/About_the_Dialogue.

¹¹⁶ Dominguez failed to state in the paper that the dataset was his own.

5. Concluding Thoughts

What appears above is by no means an exhaustive examination of the literature on the determinants of UNGA voting patterns. If anything, the literature reviewed here serves to illuminate the complexity of UNGA voting, especially considering what factors the literature has identified (to varying degrees) as potentially relevant voting affinity. While relevant to some extent, many of the works on this topic are outdated; the world is a very different place from the 1970s and 1980s from which some of these studies came. Additionally, the literature on the impact of trade or investment on UNGA voting is, at best, incomplete and almost centrally focused on whether nations vote in alignment with the United States. This yields little insight into the dynamic of China and Brazil, two rapidly developing countries with varying strengths and weaknesses.

More specifically, there is a paucity of empirical evidence whether Sino-Brazilian trade or investment significantly influences Brazil's votes in the UNGA. To date, the literature discussing the impact of Sino-Brazilian trade or investment has largely focused on anecdotal evidence and case materials. While these studies have made valuable contributions to the literature, this thesis aims to provide a robust empirical analysis of this question.

The review of the literature for this thesis noted that there is a lack of consensus as to whether trade or investment influences UNGA voting behavior. As such, this thesis does not assume *a priori* whether trade or investment affects UNGA voting. The literature, however, notes that trade appears to influence UNGA voting. This thesis will thus need to control for foreign trade to determine whether FDI influences UNGA voting.

III. DATA AND METHODOLOGY

A. INTRODUCTION

Chapter II of this thesis reviewed the literature and developed a set of stylized facts regarding the influence of a bilateral economic relationship on UNGA voting. There is a distinct lack of empirical evidence regarding whether the growing economic relationship between China and Brazil influences Brazil's foreign policy, as proxied by its UNGA voting behavior. This chapter develops a framework for empirically investigating the influence of international trade, international economic and military assistance, and FDI on UNGA voting with specific focus on the relationship between the PRC and Brazil.

The chapter will use a single case study and statistical analysis. It will employ Sino-Brazilian economic data on trade and investment. The data are readily available through the IMF International Financial Statistics (IFS),¹¹⁷ World Development Indicators (WDI)¹¹⁸ and the Direction of Trade Statistics (DOTS)¹¹⁹ databases. The research will also utilize Christopher Kilby's update¹²⁰ to Erik Voeten and Adis Merdzanovic's data¹²¹ on UNGA voting as a proxy for political influence.

The objective of this chapter is to present an empirical methodology for estimating the influence that the variables of interest have on Brazil's UNGA voting pattern over time. The second section of this chapter specifies the testable hypotheses. The third section discusses the measurement of UNGA votes and the data sources that Chapter IV uses for the estimation. Additionally, this chapter defines and discusses the variables that Chapter II developed to test the stylized facts. The fourth section of this

¹¹⁷ See: <http://elibrary-data.imf.org/FindDataReports.aspx?d=33061&e=169393>.

¹¹⁸ See: <http://data.worldbank.org/data-catalog/world-development-indicators>.

¹¹⁹ See: <http://elibrary-data.imf.org/FindDataReports.aspx?d=33061&e=170921>.

¹²⁰ Christopher Kilby, "The Political Economy of Conditionality: An Empirical Analysis of World Bank Loan Disbursements," *Journal of Development Economics* 89, no. 1 (April 2008): 61–61.

¹²¹ Erik Voeten and Adis Merdzanovic, "United Nations General Assembly Voting Data," 2009, http://dvn.iq.harvard.edu/dvn/dv/Voeten/faces/study/StudyPage.xhtml?studyId=38311&studyListingIndex=0_dee53f12c760141b21c251525332.

chapter develops the empirical framework and specifies the estimation equations that Chapter V uses to test the hypotheses of interest. The fifth section of this chapter provides some descriptive statistics of particular interest to this thesis.

B. EMPIRICAL HYPOTHESIS

The purpose of this section is to review the stylized facts presented in Chapter II of this thesis and to specify the empirical hypotheses of interest. This thesis is specifically interested in whether Brazil's voting affinity, as measured by the ratio of Brazil's actions in the UNGA that coincide with similar Chinese actions, changes in response to shifts in international trade, international investment, and U.S. international aid.

1. International Trade

A priori, there appears to be a consensus in the literature that international trade positively and significantly influences a country's foreign policy with respect to its major trading partners. If so, then this thesis would expect, *a priori*, that an increase in bilateral trade flows between China and Brazil, relative to the overall level of Brazilian international trade, would increase the likelihood that Brazil's UNGA votes are the same as China's UNGA votes. Rather than using aggregate exports and imports as one measure, this thesis examines whether an increase in the share of exports (imports) relative to total exports (imports) to (from) China influences Brazil's voting behavior.

a. Hypothesis One

All else being equal, a change in the level of exports from Brazil to China, as measured by the ratio of Brazilian exports to China to total Brazilian exports, may significantly influence Brazil's UNGA voting affinity with China.

b. Hypothesis Two

All else being equal, a change in the level of imports from China to Brazil, as measured by the ratio of Brazilian imports from China to total Brazilian imports, may significantly influence Brazil's UNGA voting affinity with China.

2. Foreign Direct Investment

A priori, there appears to be a consensus in the literature that FDI positively and significantly influences a country's foreign policy with respect to its major investment partners. If so, then this thesis would expect that Brazil's UNGA votes would conform to those of China over time. Controlling for the other determinants of UNGA voting, this thesis should observe that a permanent change in the level of FDI between Brazil and China impacts Brazil's voting behavior.

a. Hypothesis Three

All else being equal, a change in the level of Chinese FDI in Brazil, as measured by the ratio of Chinese FDI to total FDI in Brazil, may significantly influence Brazil's UNGA voting affinity with China.

b. U.S. Aid

A priori, there appears to be a consensus in the literature that U.S. aid positively and significantly influences a country's foreign policy with respect to its UNGA voting. If so, then this thesis would expect that Brazil's UNGA votes would more closely conform to those of United States over time. Controlling for the other determinants of UNGA voting, this thesis should observe that a permanent change in the level of U.S. aid between Brazil and the United States influences Brazil's voting behavior.

c. Hypothesis Four

All else being equal, a change in the level of U.S. aid to Brazil, as measured by U.S. economic and military assistance to Brazil, may significantly influence Brazil's UNGA voting affinity with China.

d. Hypothesis Five

All else being equal, a change in the level of U.S. aid to Brazil, as measured by U.S. economic and military assistance to Brazil, may significantly influence Brazil's UNGA voting affinity with the United States.

C. DATA SOURCES

This section of the thesis discusses from where the data for the econometric model came. It describes the data and offers insights into any known problems with the data methodology or type.

1. UNGA Voting Data

As previously mentioned, this thesis uses Kilby's update to Voeten and Merdzanovic data on UNGA voting.¹²² Kilby's dataset corrects a few coding errors (country codes) in Voeten's dataset. Both the Kilby and Voeten datasets contain countries' roll-call votes for the years 1946–2008.¹²³ Given that the Republic of China (ROC or Taiwan) occupied the UN seat up to 1971 and China (PRC) was absent from the whole session or otherwise ineligible from 1972–1973, this thesis covers the time period 1974–2008.¹²⁴

Given the mechanics of UNGA voting, discussed in Chapter II, UNGA votes are a record of how a country voted on a given resolution.¹²⁵ The literature debates what exactly UNGA votes measure and what it means if two countries vote in agreement¹²⁶ (e.g., “affinity” or dyadic UNGA voting behavior). For example, Ceren Altincekic wonders, “Is it interest, or norms? Is it capturing the manipulative power of industrial countries?”¹²⁷ Similarly, Altincekic also questions what the dyadic voting behavior

¹²² See: Christopher Kilby, “The Political Economy of Conditionality: An Empirical Analysis of World Bank Loan Disbursements,” *Journal of Development Economics* 89, no. 1 (April 2008): 61–61; and Erik Voeten and Adis Merdzanovic, “United Nations General Assembly Voting Data,” 2009, http://dvn.iq.harvard.edu/dvn/dv/Voeten/faces/study/StudyPage.xhtml?studyId=38311&studyListingIndex=0_dee53f12c760141b21c251525332.

¹²³ For a description of the Voeten dataset, please see “Codebook,” http://dvn.iq.harvard.edu/dvn/dv/Voeten/faces/study/StudyPage.xhtml?studyId=38311&studyListingIndex=0_dee53f12c760141b21c251525332 (accessed September 27, 2011).

¹²⁴ Dominguez covered the time period of 1991–2003.

¹²⁵ As previously discussed in Chapter II, the UNGA only records votes if a country specifically requests this function prior to voting.

¹²⁶ See, for example, Ceren Altincekic, “FDI Peace: Which “Capitalism” Leads to More Peace Among Dyads? One Earth Future Foundation Working Paper, October 2009, http://www.oneearthfuture.org/siteadmin/images/files/file_41.pdf (accessed September 30, 2011).

¹²⁷ Ibid., 8.

“represents with regards to strategic state interactions.”¹²⁸ Additionally, Altincekic cautions against conceiving of UNGA votes as a “lump-sum category of behavior” given that “the issue at hand may largely determine the voting patterns of states.”¹²⁹ Altincekic goes on to that that, “further research is needed to unpack affinity and its significance.”¹³⁰ Stone, however, has another perspective on UNGA votes; he believes that the votes are “unimportant enough to serve as a sincere measure of countries’ foreign policy preferences.”¹³¹ Thus the votes capture “the similarity of two countries’ foreign policies.”¹³² Others in the literature also feel that the UNGA votes are of value.¹³³

2. The IMF International Financial Statistics (IFS)

The IMF publishes the International Financial Statistics (IFS)¹³⁴ data monthly, which contains financial information it collects from a variety of sources. The dataset contains information on 200 countries and 32,000 time series on economic topics, to include balance of payments banking and financial systems, labor, international liquidity, prices, and trade. The majority of the annual data begin in 1948; quarterly monthly data

¹²⁸ Ceren Altincekic, “FDI Peace: Which “Capitalism” Leads to More Peace Among Dyads? One Earth Future Foundation Working Paper, October 2009, http://www.oneearthfuture.org/siteadmin/images/files/file_41.pdf (accessed September 30, 2011), 8.

¹²⁹ Ibid.

¹³⁰ Ibid. What is interesting is that Altincekic (2009) finds that FDI, not trade, is a more significant determinant of peace between nations. For example, Altincekic (2009) states on page 10, “economic interdependence through FDI makes the benefits from conquest lower than before,” citing Stephen Brooks, *Producing Security: Multinational Corporations, Globalization, and the Changing Calculus of Conflict*. (Princeton: Princeton University Press, 2005). Altincekic (2009) continues on page 10, “Trade does not have the same effect as FDI because conquest gives access to primary goods, which can be traded. Conversely, invasion or war scares FDI out, which makes occupation less beneficial. These opposite effects of trade and FDI show that the former does not improve peaceful relations between states, but the latter does, significantly.” On page 16, Altincekic (2009) finds that, “The results are encouraging, pointing to the existence of an FDI peace: the more investment states receive and send to each other, the less likely they are to be involved in militarized disputes with each other.”

¹³¹ Randall W. Stone, “The Political Economy of IMF Lending in Africa.” *American Political Science Review* 98, no. 4 (November 2004): 580.

¹³² Ibid.

¹³³ See, for example, William J. Dixon and Bruce E. Moon, “Political Similarity and American Foreign Trade Patterns,” *Political Research Quarterly* 46, no. 1 (March 1993): 5–25 and William J. Dixon, “The Emerging Image of U.N. Politics,” *World Politics* 34, no. 1 (1981): 47–61.

¹³⁴ Order access to online statistics at: <http://www.imfbookstore.org/ProdDetails.asp?ID=IFEOL>.

begin in 1957 and most balance of payments data begin in 1970.¹³⁵ The IMF compiles the data from various different sources, such as government departments, central banks, the UN, International Labor Organization (ILO) and private financial institutions.

3. The Direction of Trade Statistics (DOTS)

The IMF publishes the Direction of Trade Statistics (DOTS), which “provides data on the value of merchandise exports and imports between each country and all its trading partners.”¹³⁶ Included are: total bilateral and multilateral exports and imports aggregated at national or regional group level; data for the most recent six quarters and the latest year for 169 countries, and ten quarters and five years for the world and area tables.¹³⁷

4. The World Development Indicators (WDI)

The World Development Indicators (WDI)¹³⁸ is World Bank’s primary collection of development indicators. The World Bank compiles the data from officially recognized international sources. Data include the most current and accurate global development data available using national, regional and global estimates. The data reports on over 800 indicators covering more than 150 economies. The World Bank releases the annual publication in April of each year and updates the online database three times a year. The thesis uses WDI data on GDP per capita, population, net FDI inflows and outflows and trade as a percentage of GDP.

5. U.S. Aid Data

This thesis uses data on U.S. aid to Brazil and China from the U.S. Agency for International Development’s U.S. Overseas Loans and Grants: Obligations and Loan

¹³⁵ See: International Monetary Fund. “Dataset Descriptions and Access to Data,” http://www.esds.ac.uk/international/access/dataset_overview.asp#desc_IMFIFS (accessed November 5, 2011).

¹³⁶ See: International Monetary Fund, “Direction of Trade Statistics Online Subscription,” August 1, 2008, <http://www.imf.org/external/pubs/cat/longres.cfm?sk=20096.0> (accessed November 5, 2011).

¹³⁷ Ibid.

¹³⁸ World Bank. “World Development Indicators,” <http://data.worldbank.org/data-catalog/world-development-indicators>.

Authorizations, July 1, 1945–September 30, 2009, commonly referred to as the “Greenbook.”¹³⁹ The Greenbook contains summary data of the U.S. Government foreign assistance from 1945 and offers detailed annual data for the last four fiscal years. Recipient countries report the data, which the Greenbook organizes by geographic region, without distinguishing between developed and developing nations. Any country recognized by the U.S. State Department as an “Independent State” that has received economic or military assistance since 1945 receives an individual country page.¹⁴⁰

6. FDI Data

While several organizations¹⁴¹ collect FDI information, this thesis employs data for Chinese outward foreign direct investment (OFDI) into Brazil from two different organizations, namely the Ministry of Commerce (MOFCOM), People’s Republic of China, and the UN Conference on Trade and Development (UNCTAD). MOFCOM has published both the 2009¹⁴² and 2010¹⁴³ *Statistical Bulletin of China’s Outward Foreign Direct Investment*, which contain data on China’s OFDI from 2003–2009 and 2004–2010, respectively. UNCTAD offers data on FDI stocks and flows by country of origin for 112 economies in the form of a Country Profile,¹⁴⁴ one of which is Brazil.¹⁴⁵ Brazil’s Country Profile contains FDI stock and flow data from 1990–2002. As neither organization provides a complete picture of these data, this thesis constructs its own

¹³⁹ U.S. Agency for International Development. “Detailed Foreign Assistance Data,” U.S. Overseas Loans and Grants, <http://gbk.eads.usaidallnet.gov/data/detailed.html>.

¹⁴⁰ U.S. Agency for International Development. “U.S. Overseas Loans and Grants: Obligations and Loan Authorizations, July 1, 1945 – September 30, 2009,” http://pdf.usaid.gov/pdf_docs/PNADT555.pdf (accessed October 24, 2011).

¹⁴¹ The Brazilian Central Bank (See: <http://www.bcb.gov.br>) also provides FDI data by country of origin for Brazil; however, because their website link for data on Chinese FDI did not function after several attempts, the thesis utilizes FDI inflow data from UNCTAD.

¹⁴² Ministry of Commerce (MOFCOM), People’s Republic of China. “Statistical Bulletin of China’s Outward Foreign Direct Investment,” <http://hzs.mofcom.gov.cn/accessory/201109/1316069658609.pdf> (accessed November 15, 2011).

¹⁴³ Ibid.

¹⁴⁴ See: <http://www.unctad.org/templates/page.asp?intItemID=3198>.

¹⁴⁵ UNCTAD does not have an FDI Country Profile available for China.

measure of OFDI; this measure is discussed in the “Variables of Interest” section that immediately follows.

Of significant concern is the lack of FDI data across time. To conduct an empirical analysis, this thesis requires sufficient observations of the dependent and independent variables. Even though this thesis has constructed a FDI data series from a variety of sources, the data series only has 19 observations, insufficient for econometric analysis. Given this deficiency, this thesis examines the hypothesis that FDI influences UNGA voting behavior using correlations in Chapter IV.

D. VARIABLES OF INTEREST

This section of the thesis provides details on the variables of interest, which appear in the econometric model discussed below. The variables identified as variables of interest appear in the model as they may have an influence on Brazil’s UNGA voting pattern; thus, including them allows the model to more accurately predict their relation to the dependent variable. The main variables of interest are as follows: UNGA votes, FDI, Trade, and U.S. aid.

1. UNGA Voting Affinity Measure

This thesis constructs a measure of voting affinity to aggregate the discrete votes on UN resolutions into an annual measure. There are two different voting affinity measures constructed in the literature. One measure of voting affinity, the primary measure, allows for more variation in terms of voting affinity because it includes a third, intermediate value for coding votes. The other measure of voting affinity, the secondary measure, captures voting affinity extremes as it offers only two codes. This thesis uses both measures in its investigation of the influence of Chinese trade and FDI on Brazilian UNGA voting behavior.

a. Primary Voting Affinity Measure

Kilby includes votes that U.S. State Department deems important (which Kilby codes as KEY-VOTE_YES_1); these votes are not regular session votes. In order to track this addition to the data, Kilby codes votes as regular or not (variable “regular”).

Kilby uses the same data coding as Voeten, although he includes the country name as a Stata label. The vote codes are as follows: 1 = Yes; 2 = Abstain; 3 = No; 8 = Absent; and 9 = Not eligible to vote or absent for whole session.

Similar to Thacker,¹⁴⁶ among others, Kilby's data examines individual country pairs and assigns a 1 if the two countries vote the same (yes/yes, no/no, abstain/abstain, absent/absent), .5 if one country abstains or is absent when the other country is not (yes/absent or abstain, no/absent or abstain, absent or abstain/yes, absent or abstain/no), and 0 if one country votes yes and the other votes no. Kilby then averages the scores over the year to get the alignment variable (between 0 and 1).¹⁴⁷ Kilby's "U.S. important votes" measure averages over just the votes with KEY_VOTES_YES_1 equal to 1. His variable "U.S. other votes" measure averages over the votes with KEY_VOTES_YES_1 equal to 0. As the vast majority of votes occur near the end of the calendar year, Kilby uses lagged vote alignment in regression analysis. I use the Kilby dataset as it offers the most up-to-date data on UNGA voting and includes the U.S. State Department's important votes. While this thesis focuses on the Sino-Brazilian relationship, Brazil may be less inclined to vote against the United States on these particular votes, even if it meant voting in opposition to China. A discussion of this (and thus an inclusion of these key votes in the econometric model), however, is beyond the scope of this thesis.

b. Secondary Voting Affinity Measure

The second measure of voting affinity also employs the Kilby dataset; this second measure, however only considers actions that Brazil and China take together. Barro and Lee,¹⁴⁸ among others,¹⁴⁹ calculate the fraction of times the countries of interest

¹⁴⁶ Strom C. Thacker, "The High Politics of IMF Lending," *World Politics* 52, no. 1 (October 1999): 38–75.

¹⁴⁷ Thacker (1999) also codes votes in this way.

¹⁴⁸ Robert J. Barro and Jong-Wha Lee, "IMF-Programs: Who Is Chosen and What are the Effects?" *Journal of Monetary Economics* 52, no. 7 (October 2005): 1245–1269.

¹⁴⁹ Axel Dreher, Rainer Thiele and Peter Nunnenkamp, "Does US Aid Buy UN General Assembly Votes? A Disaggregated Analysis," *Public Choice* 136, no. 1 (July 2008): 139–164, also use this particular coding measure.

vote together (either both voting no, both voting yes, both abstaining or both being absent) to construct a measure of voting affinity. For example, if Brazil and China vote “yes,” “no,” abstain, or are absent together, then Barro and Lee code the behavior as a ‘1,’ otherwise they code it a ‘0;’ they then calculate the fraction of times the votes were the same given the number of total votes.¹⁵⁰

2. FDI Measure

FDI, net inflows, according to the WDI,

are the net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments. This series shows net inflows (new investment inflows less disinvestment) in the reporting economy from foreign investors. Data are in current U.S. dollars.¹⁵¹

Given the problematic nature of collecting Chinese data on OFDI,¹⁵² this thesis uses available MOFCOM (2003-2010) and UNCTAD data¹⁵³ (1990-2002) to construct a more complete measure of Chinese OFDI into Brazil. Given previously stated problem with the Central Bank of Brazil’s website, this thesis utilizes FDI inflow data from UNCTAD. Given the availability of Brazil’s stock and flow information, this thesis can calculate the FDI inflows for a few missing years; since data are available on inflows in 2002, the approximated Chinese ODFI data calculates the average annual growth between 1995 and 2002.¹⁵⁴ Clearly this constructed measurement is not without its

¹⁵⁰ Robert J. Barro and Jong-Wha Lee, “IMF-Programs: Who Is Chosen and What are the Effects?” *Journal of Monetary Economics* 52, no. 7 (October 2005): 1245–1269.

¹⁵¹ The World Bank. “Foreign Direct Investment, Net Inflows (BoP, Current US\$),” <http://data.worldbank.org/indicator/BX.KLT.DINV.CD.WD> (accessed December 7, 2011).

¹⁵² For more information on these issues, see: Montfort Mlachila and Misa Takebe, “FDI from BRICs to LICs: Emerging Growth Driver,” IMF Working Paper 11/178, 2011; Rabin Hattari and Ramkishen Rajan, “Understanding Bilateral FDI Flows in Developing Asia,” *Asian-Pacific Economic Literature* 23, no. 2 (November 2009), 73–93; Karl P. Sauvant, *The Journal of World Investment & Trade* 6, no. 5 (October 2005): 639–709.

¹⁵³ The “Data Sources” section discusses these available datasets.

¹⁵⁴ The average annual growth is 1.55 (in millions of \$US).

drawbacks as countries seldom report FDI, whether inward or outward, in the same way, but it is the only way in which to utilize available data for the econometric model.

3. Trade Measure

Trade data, taken from UNTAD, DOTS and IFS datasets cover the following statistics: trade as a percentage of GDP (for China, Brazil and the United States), total value of imported and exported goods for all three nations, and bilateral values of imported and exported goods between each of the countries. This thesis uses data from 1974 though data on Chinese imports to Brazil and the United States are not available until 1978.

4. U.S. Aid Measure

U.S. aid is the military and economic assistance that the United States provides to nations worldwide. The United States Agency for International Development (USAID) is predominately responsible for the implementing of U.S. aid. “In recent years more and more federal departments and agencies have begun receiving appropriated funds for international programs.”¹⁵⁵ This thesis employs data on U.S. military and economic assistance obligated (both separately and aggregated) to China and Brazil, reported in constant 2009 \$US and in historical \$US. Not surprisingly, the Greenbook’s data on military aid to China are absent. This thesis uses data from 1974 though Chinese data are not available until 1980; Greenbook data extend to 2009 and to 2002 for Brazil and China, respectively.

E. EMPIRICAL METHODOLOGY

The thesis will build on and improve the robustness of the Dominguez model.¹⁵⁶ His model examined the “relative coincidence in the voting behavior of China and several Latin American countries [including Brazil] in the United Nations General

¹⁵⁵ U.S. Agency for International Development. “Tips for Researchers,” About the Greenbook, Overseas Loans and Grants, <http://gbk.eads.usaidallnet.gov/about/tips.html> (accessed September 10, 2011).

¹⁵⁶ Jorge Dominguez, “China’s Relations With Latin America: Shared Gains, Asymmetric Hopes,” Inter-American Dialogue Working Paper (2006): 1–59.

Assembly,”¹⁵⁷ relying on a simple correlation of voting coincidence over time to draw the conclusion that the Sino-Brazilian economic relationship had no effect on Brazil’s voting pattern. This thesis instead proposes a more robust model, which depends on multivariate regression analysis.

The model is as follows:

$\text{Voting affinity}_t = \alpha + \beta_1 \text{Imports}_t + \beta_2 \text{Exports}_t + \beta_3 \text{FDI}_t + \beta_4 \text{USAid}_t + \beta_5 \text{GDPPC}_t + \gamma_t + \varepsilon_t$	(1)
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Where voting affinity is the percentage of total UNGA votes for Brazil and China that were the same in year t (i.e., the number of times Brazil and China had the same UNGA vote in year t divided by the total number of votes in year t). In this model “Imports” represents the percentage of Brazil’s gross domestic product (GDP) comprising imports from China; similarly, “Exports” are the percentage of Brazil’s GDP from its exports to China. The term FDI symbolizes the percentage of Brazil’s FDI from China. The coefficients of interest are β_1 , which measures the effects of changes in Sino-Brazilian trade and their UNGA voting pattern, and β_2 , which measures the effects of changes in Sino-Brazilian FDI and their UNGA voting pattern. USAID represents the amount of U.S. aid. GDPPC is the GDP per capita, which represents the level of economic development. γ_t represents the time effects (i.e., time trend) and ε_t is the error term. The “time trend” variable controls for any time specific trends in the data.

While far from perfect, the model strives to address the endogeneity concerns inherent in the use of UNGA voting data by employing control variables. The model includes the following control variables: the level of economic development, represented by GDP per capita and the amount of U.S. aid. This thesis employs Ordinary Least Squares (OLS) to explore whether Chinese trade or investment influences Brazil’s

¹⁵⁷ Jorge Dominguez, “China’s Relations With Latin America: Shared Gains, Asymmetric Hopes,” Inter-American Dialogue Working Paper (2006), 12.

UNGA voting behavior. The properties of the OLS estimator are well known¹⁵⁸ and take the form of:

$$y = \beta_0 + \beta_1 x_1 + \dots + \beta_k x_k + u \quad (2)$$

Where voting affinity is the dependent variable, voting affinity (y), and the explanatory variables are in the X matrix. The OLS estimator is appropriate as a starting point as the dependent variable takes on values between zero (no voting affinity) and one (perfect voting affinity). While the voting events are discrete outcomes (yes, no, abstain, absent), the voting affinity variable is the average of these discrete outcomes over a given time period. As such, the voting affinity variable is continuous over the (0,1) range and the use of a discrete estimator (Logit, Probit) is not possible.

F. DESCRIPTIVE STATISTICS

This section further describes the estimation strategy's variables of interest: FDI, trade, U.S. aid and GDPPC. This section also discusses the trends of these variables over time and represents the data graphically to demonstrate the changes. Additionally, Table offers statistics on the mean, standard deviation, min and max of the independent variables (IV) and dependent variables (DV).

An examination of Table 1: Descriptive Statistics indicates that the largest number of observations for the independent variables is 35 and the lowest 19. Unfortunately, only having 19 observations for a variable, in this case, FDI, poses a challenge to the estimation strategy utilized in this thesis. The subsection on FDI below describes the challenges this has on interpreting the resultant data. Interestingly, Table 1 indicates that the mean voting affinity using the primary measure (described in the subsection below) is dramatically higher for Sino-Brazilian voting affinity as compared to U.S.-Brazilian voting affinity, with a mean of 0.87 versus 0.35, respectfully. This demonstrates that, on average, Brazil votes with China 87% of the time, in comparison to voting with the United States, on average, 35% of the time. Similarly, in the secondary

¹⁵⁸ See Jeffrey M. Wooldridge. *Introductory Econometrics: A Modern Approach*. (Mason, OH: South-Western, 2003), and William H. Greene. *Econometric Analysis* (Fifth Edition) (Upper Saddle River, NJ: Pearson Education, Inc., 2003).

measure of voting affinity (also described below), the mean is 0.76 for Sino-Brazilian voting affinity as opposed to the mere 0.19 mean for U.S. Brazilian voting affinity. This shows that, on average, Brazil votes with China 76% of the time, in comparison to voting with the United States, on average, 19% of the time. As far as inward FDI is concerned, China clearly receives more FDI than that of Brazil, with means of 2.89% of GDP and 1.54% of GDP, respectively. For outward FDI, however, the United States leads the way, with a mean of 1.05% of GDP, whereas China and Brazil have means of 0.33% of GDP and 0.28% of GDP, respectively.

Despite recent economic downturn, the economies of China and Brazil continue to have impressive rates of growth.¹⁵⁹ The Sino-Brazilian economic relationship is also expanding, as evidenced by rising trade between the two nations. Brazil's exports to and imports from China are also on the rise, which represents a growing percentage of Brazil's total imports and exports; China's exports to and imports from Brazil are also swelling, representing an increasing percentage of their total imports and exports.¹⁶⁰

1. Foreign Direct Investment

Having discussed the trade composition by volume, it is important to debate the merits, or potential detriments, of this trade from each nation's perspective. From the Brazilian view, for many reasons, trade with China is often bittersweet. While Brazil receives relatively little FDI from China, it has, over the years, been increasing.¹⁶¹

As noted previously and illustrated in Table 1, there are insufficient observations to incorporate FDI into the empirical estimation in Chapter IV. Including FDI would reduce the number of observations to 19. A small sample size indicates that the properties of the OLS estimator are not known, thus any estimates are likely to be inconsistent (e.g., not representative of the true population parameter) and inefficient (standard errors are

¹⁵⁹ See Figure 13: GDP per capita, 1974–2008 and Figure 14: GDPPC growth rates, 1975–2008. See also Figure 10: Brazil's exports to the United States and China, as a percentage of Brazil's total exports; Figure 6: Brazil's imports from the United States and China, as a percentage of Brazil's total imports.

¹⁶⁰ See Figure 7: Growth rate in % of Brazilian imports, 1975–2008 and Figure 11: Growth rates in % of Brazilian exports, 1975–2008.

¹⁶¹ See Figure 2: Chinese OFDI into Brazil as a percentage of Brazil's total inward FDI, 1992–2008 and Figure 3: Growth rate in % of Chinese OFDI into Brazil.

biased in an unknown direction). As such, this thesis reports results of the simple correlation in the next chapter and discusses the evolution of Chinese FDI in the following section.

While many argue that Brazil has benefitted from increased Chinese FDI, some note that Brazilian expectations of Chinese FDI have largely remained unmet.¹⁶² Although Chinese FDI into Brazil is clearly on the rise, determining the true benefits to Brazil remains somewhat murky. Chinese FDI in Brazil arguably serves China more than it does Brazil; the bulk of Chinese investment is in support of infrastructure development associated with the resource extraction of Brazilian exports to China.¹⁶³ While these infrastructure developments arguably benefit all of Brazil's export markets, which other Latin American nations can then utilize, China often uses their own laborers, denying the additional benefits Brazil could gain from the employment of their own workforce.¹⁶⁴ A discussion on Chinese FDI would be lacking, however, without drawing attention to what it is *not* doing in Brazil. China, for the most part, is not building factories and

¹⁶² See: Renato Baumann, "Some Recent Features of Brazil-China Economic Relations," United Nations Economic Commission for Latin America, April 2009, <http://www.cebc.org.br/sites/500/521/00001316.pdf> (accessed May 15, 2010) and Amaury de Souza, "Brazil and China: An Uneasy Partnership," China – Latin America Task Force. Miami, FL: Center for Hemispheric Policy University of Miami, 2008, <http://www6.miami.edu/hemispheric-policy/FinalVersionDeSouza21408.pdf> (accessed April 20, 2010). According to de Souza (2008), "China's investment into Brazil is "far from impressive" and "tends to be export-oriented." Perhaps fueling Brazilians dissatisfaction with the Chinese level of investment stemmed from President Hu Jintao's 2004 speech to the Brazilian congress where he allegedly promised to offer \$100 billion in direct investment to Latin America. According to Jiang (2009), however, Hu was referring to trade, not investment. See: Shixue Jiang, "The Panda Hugs the Tucano: China's Relations with Brazil. *ChinaBrief* 9, no. 10 (May 2009): 7–10.

¹⁶³ Amaury de Souza, "Brazil and China: An Uneasy Partnership," China – Latin America Task Force. Miami, FL: Center for Hemispheric Policy University of Miami, 2008, <http://www6.miami.edu/hemispheric-policy/FinalVersionDeSouza21408.pdf> (accessed April 20, 2010).

¹⁶⁴ The complaint that China uses its own laborers is a common complaint throughout the region. See, for example, June T. Dreyer, "China's Power and Will: The PRC's Military Strength and Grand Strategy," *Orbis* 51, no. 4 (Fall 2007): 651–654. For these reasons, the Brazilian Ministry of Labor has a history of limiting Chinese labor in Brazil; it accepted only 600 Chinese construction workers of a CSA (a joint venture between Germany's ThyssenKrupp and Brazil's Federation of Rio de Janeiro's Industries aka Firjan) to build a coke plant near Rio de Janeiro. See: *People's Daily*. "Rio Industries Agree to Hire Chinese Workers," Online News Archive, Beijing, China, December 21, 2006, <http://english.peopledaily.com.cn/200612/21/archive.html> (accessed April 10, 2010).

manufacturing plants to assemble products for export to China, which would then allow Brazil to capture additional value for its exports.¹⁶⁵

Chinese FDI in Brazil and the composition of Brazil's exports to China have the tendency to suffer similar fates. This thesis is mostly concerned with trade volume; a discussion of trade composition is beyond the scope of the thesis. That said, the literature indicates that the majority of Brazil's exports to China are agricultural goods and natural resources. Like the composition of Chinese FDI in Brazil, Brazil's reliance on its agriculture and natural resources exports, which harkens back to Brazil's colonial roots,¹⁶⁶ often fails to capture the additional value added associated with higher end products. This focus on low-end products, some argue, could be detrimental to Brazil's long-term economic development.¹⁶⁷ Some authors argue that Brazil benefits from

¹⁶⁵ The tide may be turning, however, as China's Wuhan Iron and Steel Company (WISCO), China's third biggest steel maker, recently announced plans to build their first steel mill in Brazil; this comes after WISCO gained Chinese government approval for stock transaction with Mineracao e Metalicos SA (MMX), the Brazilian iron ore miner. WISCO registered an overseas company in Brazil, turning it into an operation; the company will be responsible for WISCO's mining project and construction of the steel mill. The steel mill, which will be located outside of Rio de Janeiro, has a capacity of five million tons per annum; see: *China Mining*. "WISCO Starts To Build Its First Overseas Steel Mill in Brazil," March 1, 2010, <http://www.chinamining.org/Investment/2010-03-01/1267409371d34188.html> (accessed April 18, 2010). According to the article, *People's Daily Online*. "China To Build \$5 Billion Steel Plant in Brazil," April 16, 2010, <http://english.peopledaily.com.cn/90001/90776/90883/6953613.html> (accessed April 29, 2010), WISCO will have a 70% stake and MMX a 30% stake in the mill. Mr. Eike Batista, the owner of MMX, indicated that the mill would supply Brazil's automobile, shipbuilding and oil platforms industries and the excess would go to China.

¹⁶⁶ "This is the same pattern of trade Brazil had in the 17th and 18th century."- Mauricio Mesquita Moreeria, an economist at the Inter-American Development Bank (quoted in: Andre Soliani and Joshua Goodman, "China Beats Brazil In Own Backyard As BRIC Summit Seeks Unity," *Bloomberg Businessweek*, April 14, 2010, <http://www.businessweek.com/news/2010-04-14/china-beats-brazil-in-own-backyard-as-bric-summit-seeks-unity.html> (accessed April 18, 2010)).

¹⁶⁷ The high demand for commodities can delay the diversification from extraction-based industries to value-added goods in some countries, potentially damaging future development options; see, Javier Santiso (Ed.) *The visible hand of China in Latin America*. (Paris: Organization for Economic Cooperation and Development (OECD), 2007).

focusing on commodity exports;¹⁶⁸ others maintain that Brazil will eventually suffer from its purported deindustrialization.¹⁶⁹ Chinese trade with and FDI into Brazil may also heighten environmental degradation and civil unrest given Brazil's dependence on primary product exportation.¹⁷⁰ A passing glance at the lumber industry offers an

¹⁶⁸ “The possibility of exploiting the region’s comparative and competitive advantages in agriculture, opening new markets for products with restrictions (tariff barriers, non-tariff barriers, quotas, etc.) to enter the U.S. and the EU,” see: Gaston Fornes and Alan Butt-Philip, “A Review of the Literature On the Expansion of China’s Firms to Latin America,” Chinese Economic Association (UK) Conference, 2008, <http://www.ceauk.org.uk/2008-conference-papers/Fornes-Gaston-Review-of-literature.pdf> (accessed April 5, 2010). Mario Osava, “Brazilians Feel Squeeze Amid China “Success.” *Asia Times*, February 23, 2010, http://www.atimes.com/atimes/China_Business/LB23Cb01.html (accessed April 13, 2010) quotes Sandra Ríos, head of the Centre for Integration and Development Studies (CINDES), as saying that Brazil’s heavily focused commodity trade with China is what “saved the Brazilian trade balance” during the global recession.

¹⁶⁹ See, for example, Alexandre de Freitas Barbosa, “Brazil: Dances with Dragon. China’s Soft Power Drive Combined With Economic Interest Opens New Doors in Brazil,” *Yale Global*, December 1, 2009, <http://yaleglobal.yale.edu/content/brazil-dances-dragon> (accessed April 16, 2010) and Mario Osava, “Brazilians Feel Squeeze Amid China “Success.” *Asia Times*, February 23, 2010, http://www.atimes.com/atimes/China_Business/LB23Cb01.html (accessed April 13, 2010). Osava (2010) quotes Mr. Jose Augusto de Castro, vice president of the Brazilian Trade Association, as saying the growth in trade with China is “a step backwards” for Brazil. Mr. de Castro further indicates that a reliance on commodities “generates low-grade jobs, whereas manufacturing employs skilled personnel for higher wages, creates a multiplier effect on employment as the production chain is longer, and expands the domestic market. David J. Lynch, “China’s Growing Pull Puts Brazil in a Bind. *USA Today*, March 21, 2006, http://www.usatoday.com/money/world/2006-03-21-brazil-china-cov-usat_x.htm (accessed April 10, 2010); Alexandre de Freitas Barbosa and Ricardo C. Mendes, “Economic Relations Between Brazil and China: A Difficult Partnership,” Friedrich Ebert Stiftung (FES) Briefing Paper Dialogue on Globalization, January 2006 and Alexandre de Freitas Barbosa, “The Rising China and its Impacts On Latin America: Strategic Partnership Or a New International Trap? VII Reunión de la Red de Estudios de América Latina y el Caribe Sobre Asia-Pacífico (REDEALAP), August 27–28, 2008 Universidad Externado de Colombia: Bogotá, Colombia note that the influx of cheap manufactured goods from China has devastated the Brazilian manufacturing industry. Brazilian manufacturing exports to China have been decreasing. Similarly, despite the benefits of Mercado Comum do Sul (Mercosur), Additionally, Brazilian manufacturing exports to the Latin American region have also been in decline; Argentina, for example, has replaced goods it traditionally imported from Brazil with those of China. See, for example, Barbosa (2008), and Amaury de Souza, “Brazil and China: An Uneasy Partnership,” China – Latin America Task Force. Miami, FL: Center for Hemispheric Policy University of Miami, 2008, <http://www6.miami.edu/hemispheric-policy/FinalVersionDeSouza21408.pdf> (accessed April 20, 2010). R. Evan Ellis. *China in Latin America. The Whats and the Wheres*. (Boulder, CO: Lynne Rienner Publishers, 2009), argues, however that Brazilian consumers have access to greater availability and that the price differential between Brazil and China’s manufactured goods often translates to either buying the Chinese good, or refraining from purchasing the good at all.

¹⁷⁰ Larry Rohter, “Brazil Weighs Costs and Benefits of Alliance With China,” *The New York Times*, November 20, 2005, <http://www.nytimes.com/2005/11/20/international/americas/20amazon.html> (accessed April 15, 2010) details some of the drawbacks to economically aligning itself with China.

example of how some trade and investment might better serve the interests of Brazil.¹⁷¹ An in-depth examination of “good” and “bad” trade or investment, however, is beyond the scope of this thesis.¹⁷²

¹⁷¹ World Resources International (WRI), “The Brazilian Pulp Industry Increase Production and Pulpwood Costs Are Going Up in 2009, Reports *Wood Resource Quarterly*,” August 2009, <http://www.pr.com/press-release/177147> (accessed April 12, 2010) offers insight into the impacts of the lumber industry on Brazil. WRI (2009) also notes that China is increasingly purchasing Brazilian lands in the Amazon and beyond for timber and paper products exportation. Brazil presently restricts foreign individuals domiciled outside of Brazil or foreign companies organized outside of Brazilian law, from purchasing Brazilian lands; however, foreign individuals living in Brazil and foreign companies with a Brazilian branch are permitted to purchase Brazilian land; see Roberto R. Soares da Silva, “Foreign Ownership of Brazilian Rural Land: Rules, Restrictions, and Opportunities,” *LexUniversal*, October 22, 2010, <http://lexuniversal.com/pt/articles/3366> (accessed 15 April 15, 2010). In October of 2009, the Brazilian Chamber of Deputies “approved legislation that would further restrict foreign ownership of land along Brazil’s borders, and within the Amazon; see, U.S. Department of State, “2010 Investment Climate Statement – Brazil, March 2010, <http://www.state.gov/e/eeb/rls/othr/ics/2010/138040.htm> (accessed April 10, 2010). China’s purchase of Brazilians lands, of course, extends beyond securing timberland. Chongqing Grain Group, a Chinese state company, for example, plans to purchase 100,000 hectares of land in the Brazilian state of Bahia to Produce Soy for the Brazilian and Chinese Markets, see: MacauHub.com, “Chinese State Company Plans to Invest In soy production in Brazil, 2010, <http://www.macauhub.com.mo/en/news.php?ID=9306> (accessed April 15, 2010). Natuza Nenry and Ana Paula Paiva, “Brazil Says Amazon Deforestation Slowest in 21 Years,” *Reuters*, November 12, 2009, <http://www.reuters.com/article/idUSN12428323> (accessed April 20, 2010), note that, perhaps as a result of the Chinese land grab, deforestation grew in Brazil until it reached a peak in 2004. For further discussion on declining deforestation in Brazil, see: Richard Black, “Forest Loss Slows, As China Plants and Brazil Preserves,” *BBC News*, March 25, 2010, <http://news.bbc.co.uk/2/hi/8586701.stm> (accessed April 21, 2010). R. Evan Ellis. *China in Latin America. The Whats and the Wheres*. (Boulder, CO: Lynne Rienner Publishers, 2009), indicated that Chinese purchases of land and the increase in deforestation have witnessed a rise in protest from local indigenous population.

¹⁷² Leandro Rothmuller, “Does FDI Matter for Trade in Brazil? An Application of the Gravity Model. Anais do XXXI Encontro Nacional de Economia [Proceedings of the 31th Brazilian Economics Meeting] c71, ANPEC - Associação Nacional dos Centros de Pósgraduação em Economia [Brazilian Association of Graduate Programs in Economics]. Rio De Janeiro, Brazil, 2003, indicates that if protest reach a sufficient size, they may not only prove to be an internally destabilizing political force, but they also could slow FDI into Brazil as investors shy away from foreign entanglements; a decrease in FDI, of course, may potentially stifle Brazil’s economic growth.

Anecdotally, one might conclude that increased levels of Sino-Brazilian trade or investment would positively influence Brazil's UNGA voting patterns, which the literature commonly uses as a proxy for political influence or political compliance.^{173, 174} The UNGA arguably acts as a barometer for both the worldview and for the political tendencies of a nation.

Concerns over China's growing influence have appeared in numerous newspaper articles.¹⁷⁵ On the other hand, Brazilian politicians have stated their independence from China. These anecdotes suggest that determining the direction and significance of the relationship without empirical evidence is not fruitful.

Looking at Figures 1–3, which graphically depict OFDI data, it appears that OFDI is, at times, volatile; this is true for both U.S. OFDI to Brazil and for U.S. OFDI to China. Brazil, for example, saw dips in their inward FDI from the United States in 1995 and in 2001; China also saw a dip in 2001, which is to be expected given 9/11.¹⁷⁶ Brazil saw a large spike in its inward FDI in 2003 and another spike, worthy of mention, in 2005. Similarly, China saw minor spikes in 1984, 1991 and in 2000. Chinese OFDI into Brazil has been relatively low and flat until 2002–2005, where it increased steadily. In 2005 the

¹⁷³ See, for example, Neil R. Richardson and Charles W. Kegley, Jr., "Trade Dependence and Foreign Policy Compliance: A Longitudinal Analysis," *International Studies Quarterly* 24, no. 2 (June 1980): 191–222. Others in the literature have examined the UNGA voting patterns of "aided nations" in an effort to measure "compliant behavior." See, for example, Bruce E. Moon, "The Foreign Policy of the Dependent State," *International Studies Quarterly* 27, no. 3 (September 1983): 315–340; and Adrienne Armstrong, "The Political Consequences of Economic Dependence," *Journal of Conflict Resolution* 25, no. 4 (September 1981): 401–428.

¹⁷⁴ Although international trade is a "mode of exchanging commodities and currencies," arguably "foreign policy behavior can also be considered an instrument of exchange;" in this case, foreign policy can be a "partial payment" for economic benefits Neil R. Richardson and Charles W. Kegley, Jr., "Trade Dependence and Foreign Policy Compliance: A Longitudinal Analysis," *International Studies Quarterly* 24, no. 2 (June 1980): 191–222. If trade is asymmetric, whereby one country is (relatively speaking) more economically dependent than another (relatively) more dominant country, then the dependent country "can satisfy the obligation of the asymmetrical exchange by supporting the foreign policy of the dominant country" (Richardson and Kegley, Jr. 1980). Political compliance, therefore, can result from an asymmetric economic relationship.

¹⁷⁵ See, for example, John Pomfret, "China Invests Heavily in Brazil, Elsewhere in Pursuit of Political Heft," *The Washington Post*, July, 26, 2010; Sara Lana and Andrew Downie, "In Brazil, Hu Jintao Aims for Bigger Piece of Latin America Trade," *The Christian Science Monitor*, April 15, 2010; Andrés Cala, "China Grabs Latin America, Well Ahead of Obama's Outreach," *The Christian Science Monitor*, March, 21, 2011; James Morrison, "Chinese Power," *The Washington Times*, May 11, 2005, World, Embassy Row, Page A15; Humphrey Hawksley, "Chinese Influence in Brazil Worries US," *BBC News*, April 3, 2006.

¹⁷⁶ See Figure 1: Outward Foreign Direct Investment (OFDI) Flows

OFDI remained relatively stable and began increasing again in 2007. An examination of Figure 2, which shows Chinese OFDI into Brazil as a percentage of Brazil's total inward FDI, indicates that Chinese OFDI into Brazil is fairly minimal, only rising above 0.005% in 2003; it spiked in 2005, but drastically declined until 2007, when it steadily began increasing. The growth rates of Chinese OFDI in Brazil (Figure 3) show similar patterns, with a spike in 1995, immediately followed by a steep decline, where the growth rates remained relatively flat until a spike in 2003, immediately followed by a steep decline. Growth rates returned to their flat state in 2004.

2. Trade

This thesis discusses imports and exports independently to offer a more complete picture of how trade may impact UNGA voting. This section offers varying perspectives on imports and exports for Brazil, China, and the United States. Figure 4, for example, examines total imports from all three countries from 1974–2008. The United States clearly stands out as the top importer, most likely given its relatively higher GDPPC (discussed in a subsection below). The United States steadily imported more goods every year during the period in question (with the exception of 2001, where U.S. imports dropped following the 9/11 terrorist attacks). China's imports were relatively flat until they steadily began importing more around 1998. Brazil's imports while relatively flat over the period in question, began increasing their imports slightly in about 2004.

Figure 5 shows Brazil's imports from both China and the United States over the 1974–2008 period. Brazil imports much more from the United States than it does from China. Brazil's imports from China have been relatively more stable than their imports from the United States, though they have been increasing dramatically from 2003. Brazil's imports from the United States have mostly been rising steadily though they have seen modest dips (1983) and large dips (1999, 2001). Figure 6 shows Brazil's imports from the United States and China as a percentage of their total imports; Brazil very clearly imports a much larger share from the United States than from China, where U.S. imports comprised over 25% of Brazil's imports in four separate years during the period in question (1974, 1975, 1992 and 1993). In contrast, Chinese imports only

reached over a 15% share twice in the same period (2007 and 2008). Figure 7 depicts the growth rates in Brazil's percentage of imports from the United States and China. It shows that Brazil's growth rate in Chinese imports spiked in 1979, immediately falling to a much lower level where it remained until a much more modest increase in 1993, which returned to pre-1993 levels.

Figure 8 illustrates total exports during the 1974-2008 period for all three nations. U.S. exports steadily increased over the time period, while those of Brazil and China remained relatively flat until about 1991, where they began increasing at a modest level; Chinese exports, however, increased at a much more rapid rate than that of Brazil. Figure 9, shows Brazil's exports to both the United States and China. The graph demonstrates that Brazil exports more to the United States (with minor increases in 1984, 1988 and 1991) than to China. Also, Brazil's exports to China have remained relatively flat until approximately 1999, where they began increasing at a much more rapid level. Figure 10, Brazil's exports to the United States and China, as a percentage of Brazil's total exports clearly depicts that the United States holds a majority share of Brazil's exports as compared to China; Brazil's exports to the United States, for example, was over 25% of Brazil's total exports 1984 through 1988 and in 2002. In comparison, Brazil's exports to China were only over 5% of Brazil's total exports 2003 through 2008. Figure 11 shows the growth rates in the percentage of Brazilian exports to Brazil and China. It demonstrates that the growth rate for U.S. export remained relatively steady, while growth rates for China spiked, to a large degree, in 1997 and in 1983, 1985, 1988 and 1992, to a much more modest degree.

3. U.S. Aid

U.S. military and economic assistance to Brazil (as seen in Figure 12) over the period 1974–2008 has been relatively low. Brazil received the most assistance during this period in 1974, 1975 and 1976. U.S. assistance dropped dramatically in 1977 and remained low until the U.S. increased its assistance to a low level in 1998; since then aid levels have been fairly low.

4. GDPPC

Figure 13 shows GDP per capita for Brazil, China and the United States. The United States clearly leads the other two nations in terms of per capita GDP and Brazil's per capita GDP exceeds that of China, nearly doubling it at times. Figure 14 displays the per capita GDP growth rates for all nations. U.S. growth rates have clearly been the most stable of the three nations while both Brazil and China's growth rates have fluctuated wildly.

5. Voting Affinity

Figure 15 depicts the U.S. Brazilian voting affinity from 1974–2008. As Figure 1 demonstrates, voting affinity between the two nations has largely trended downward, with occasional spikes in affinity. Given the sometimes-troubled relationship that the United States has had with the Latin American region generally, and Brazil specifically, observing this downward trend is unsurprising. This is, perhaps, particularly predictable given regional economic strife in the late 1980s and early 1990s, known as the “lost decade,” and the increasing political distancing between the United States and the Latin American region over the wars in Iraq and Afghanistan.

Figure 16 shows the Sino-Brazilian voting affinity from 1974–2008. As Figure 2 depicts, voting affinity between the two nations has largely been relatively stable. Perhaps this is a result of the two nations sharing development and ideological goals and a South-South connection. What will be interesting to see is whether an upward trend will occur in the future as China becomes a more influential economic partner of Brazil; the expansion of the Sino-Brazilian economic relationship has been a relatively recent trend.

Outward Foreign Direct Investment (OFDI) Flows, 1974–2008

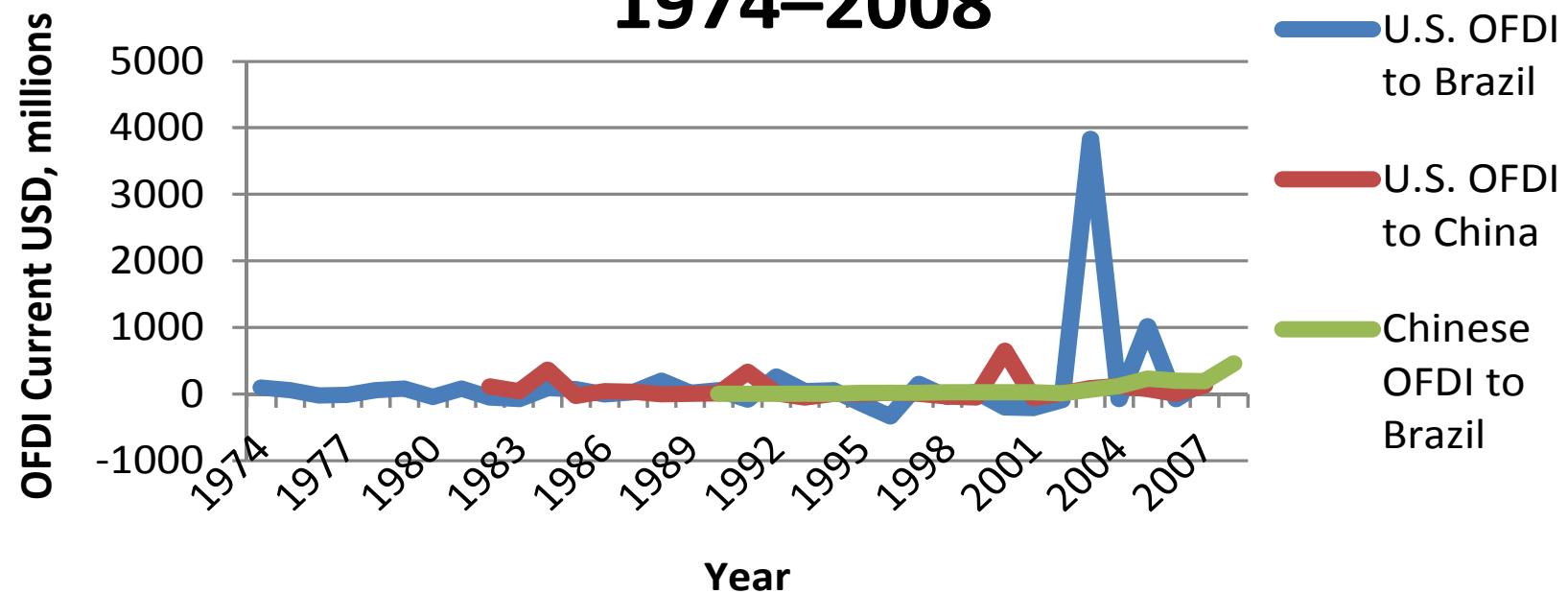


Figure 1. Outward foreign direct investment flows, 1974–2008

Chinese OFDI into Brazil as a percentage of Brazil's total inward FDI, 1992–2008

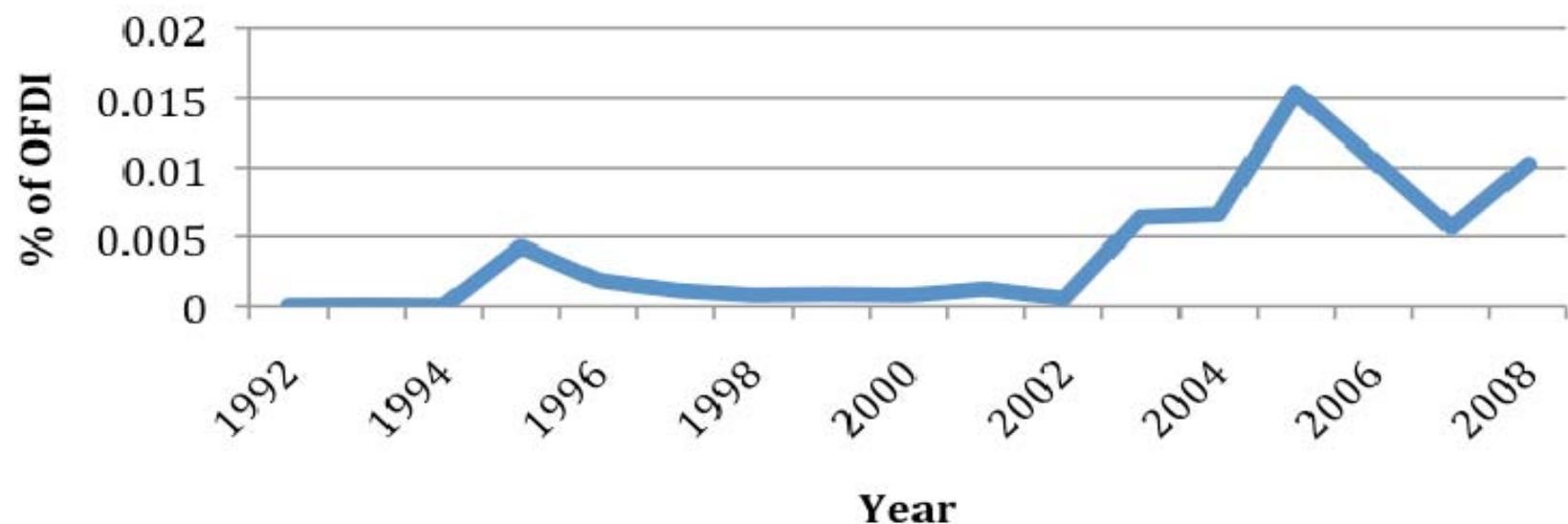


Figure 2. Chinese OFDI into Brazil as a percentage of Brazil's total inward FDI, 1992–2008

Growth rate in % of Chinese OFDI into Brazil, 1993–2008

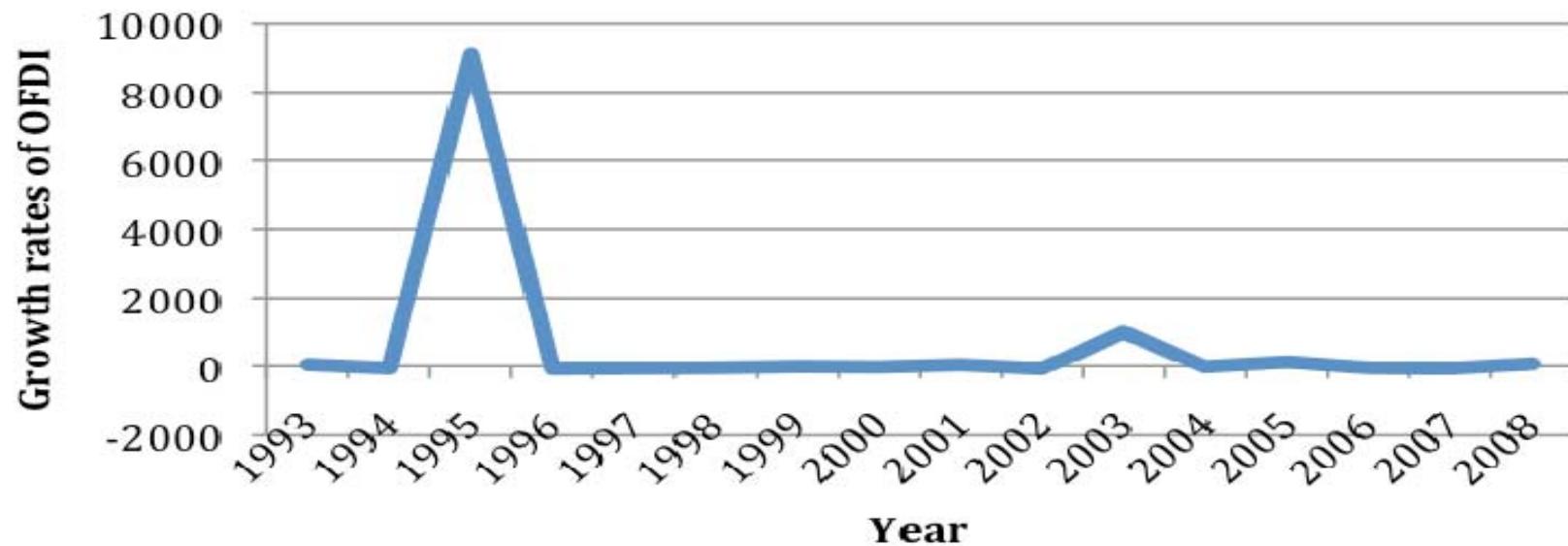


Figure 3. Growth rate in % of Chinese OFDI into Brazil, 1993–2008

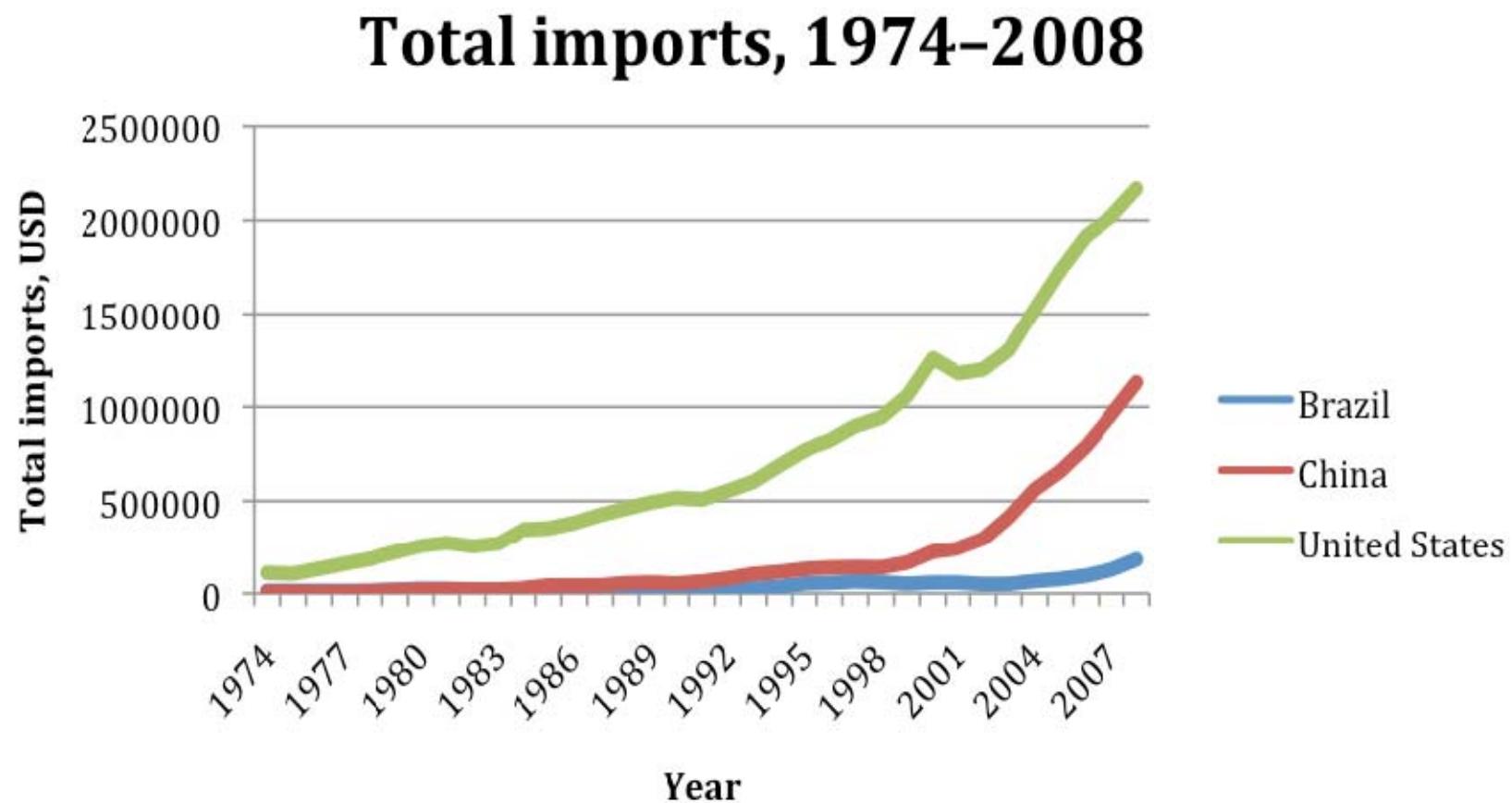


Figure 4. Total imports, 1974–2008

Outward Foreign Direct Investment (OFDI) Flows, 1974–2008

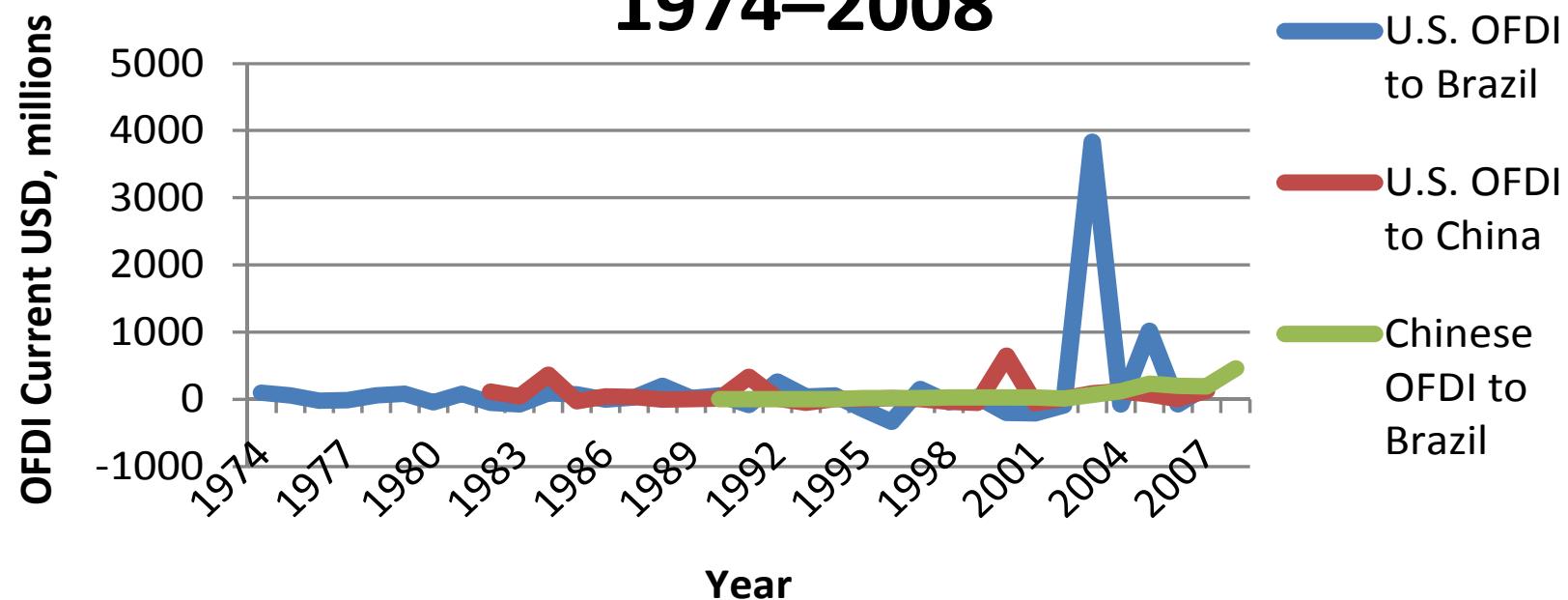


Figure 5. Brazil's imports, 1974–2008

Brazil's imports from the United States and China, as a percentage of Brazil's total imports, 1974–2008

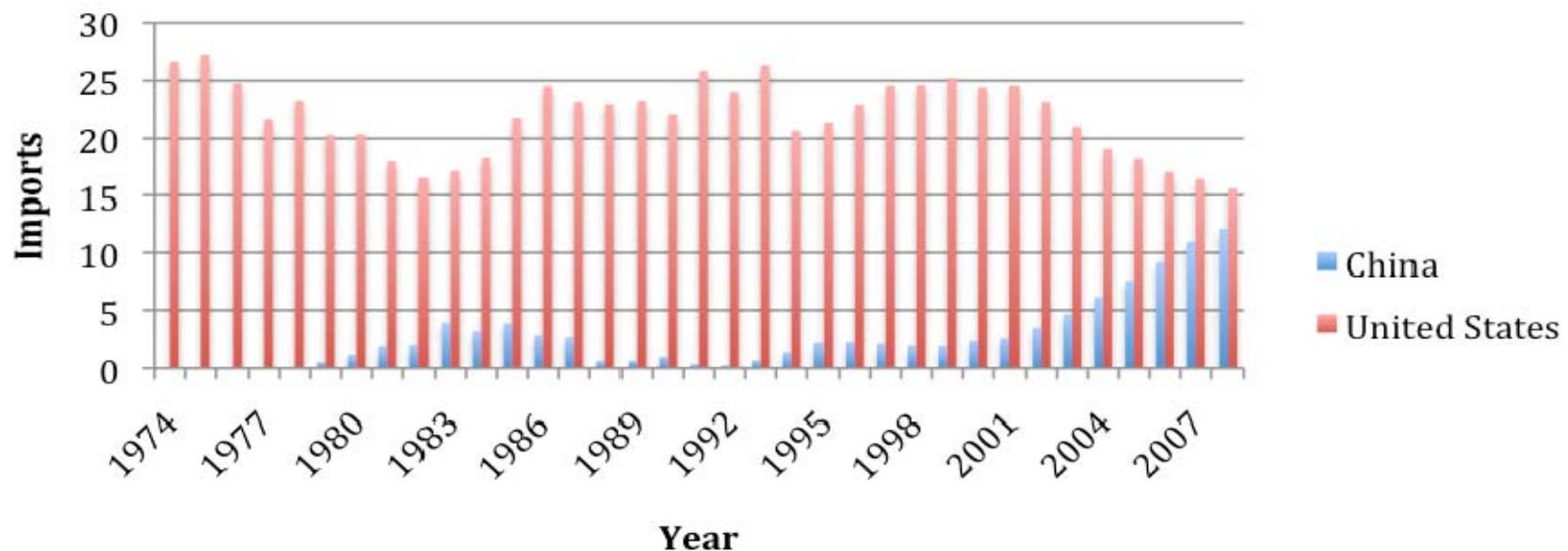


Figure 6. Brazil's imports from U.S. and China, as percentage of Brazil's total imports, 1974–2008

Growth rates in % of Brazilian imports, 1975–2008

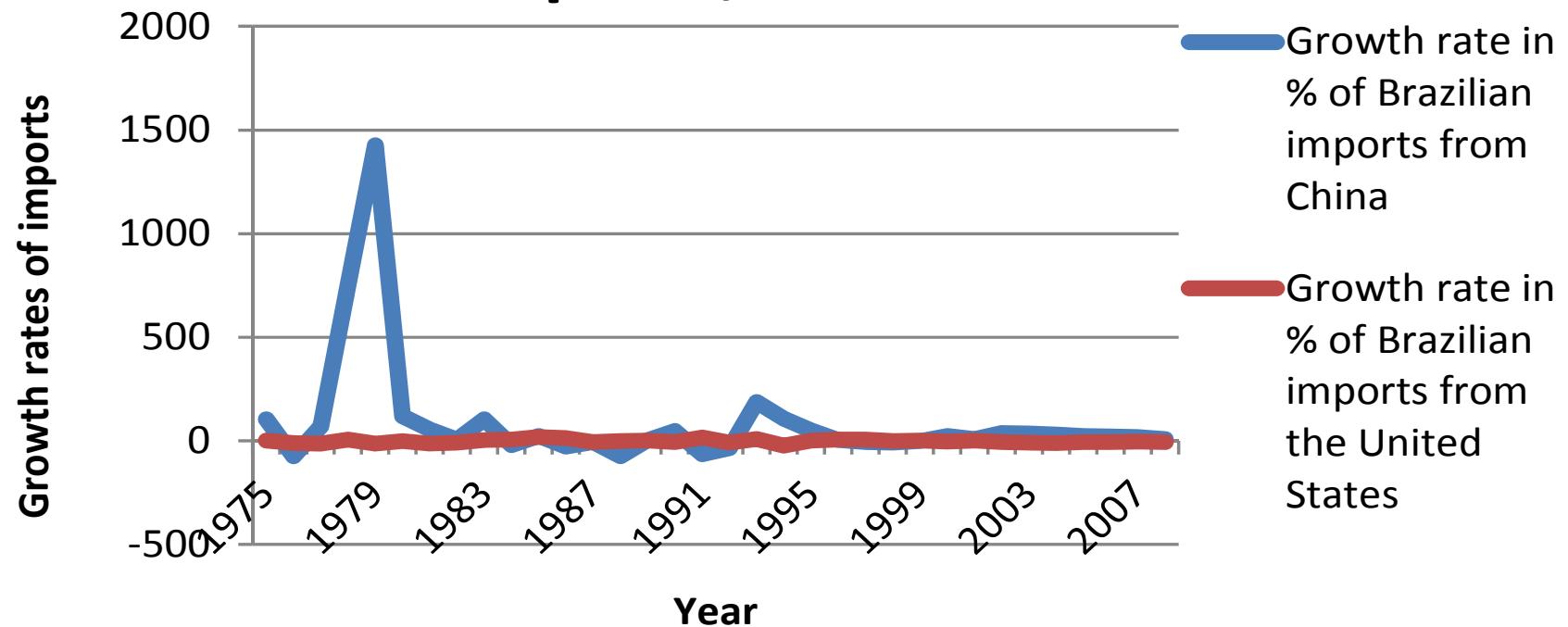


Figure 7. Growth rates in % of Brazilian imports, 1975–2008

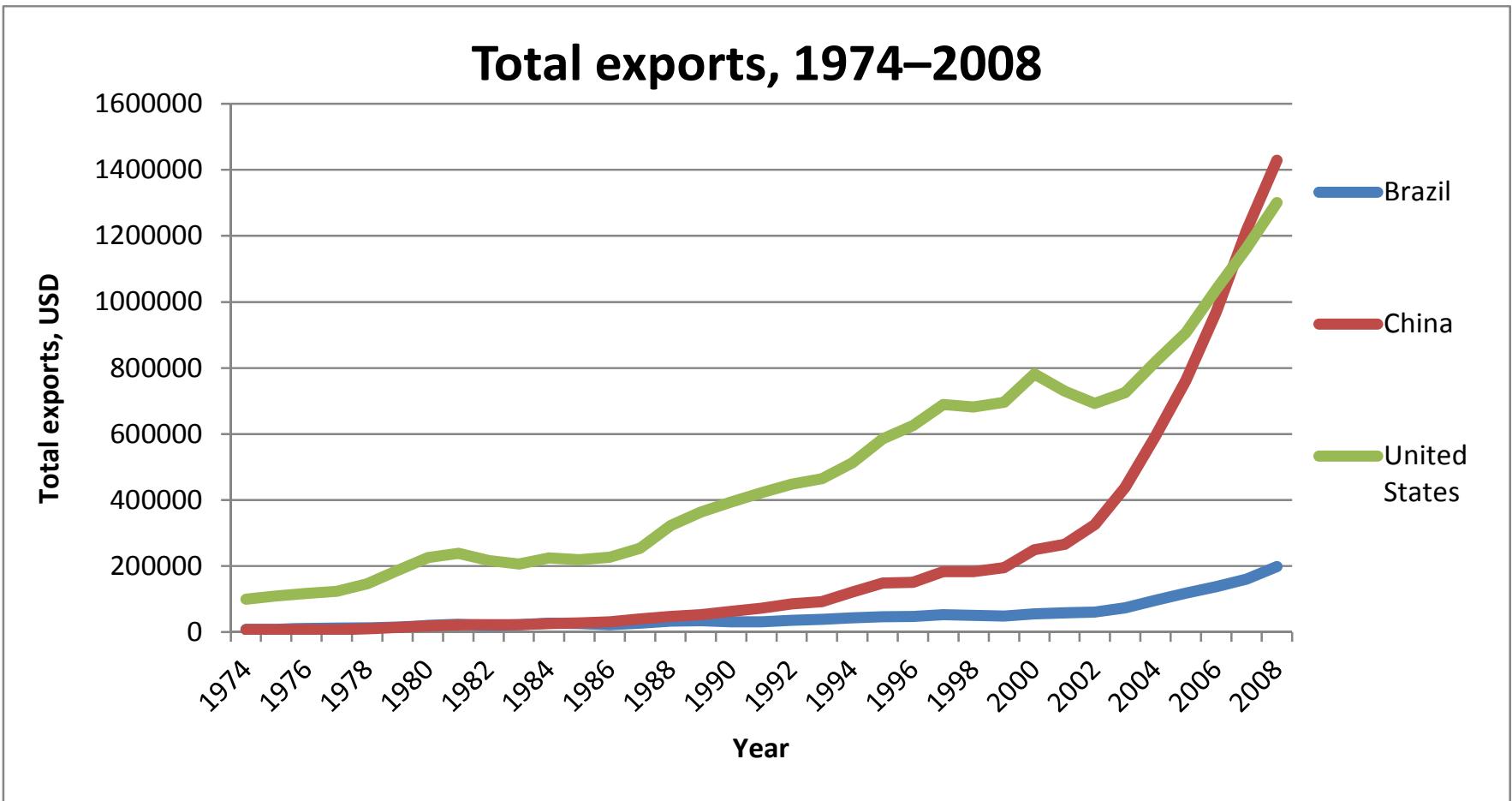


Figure 8. Total exports, 1974–2008

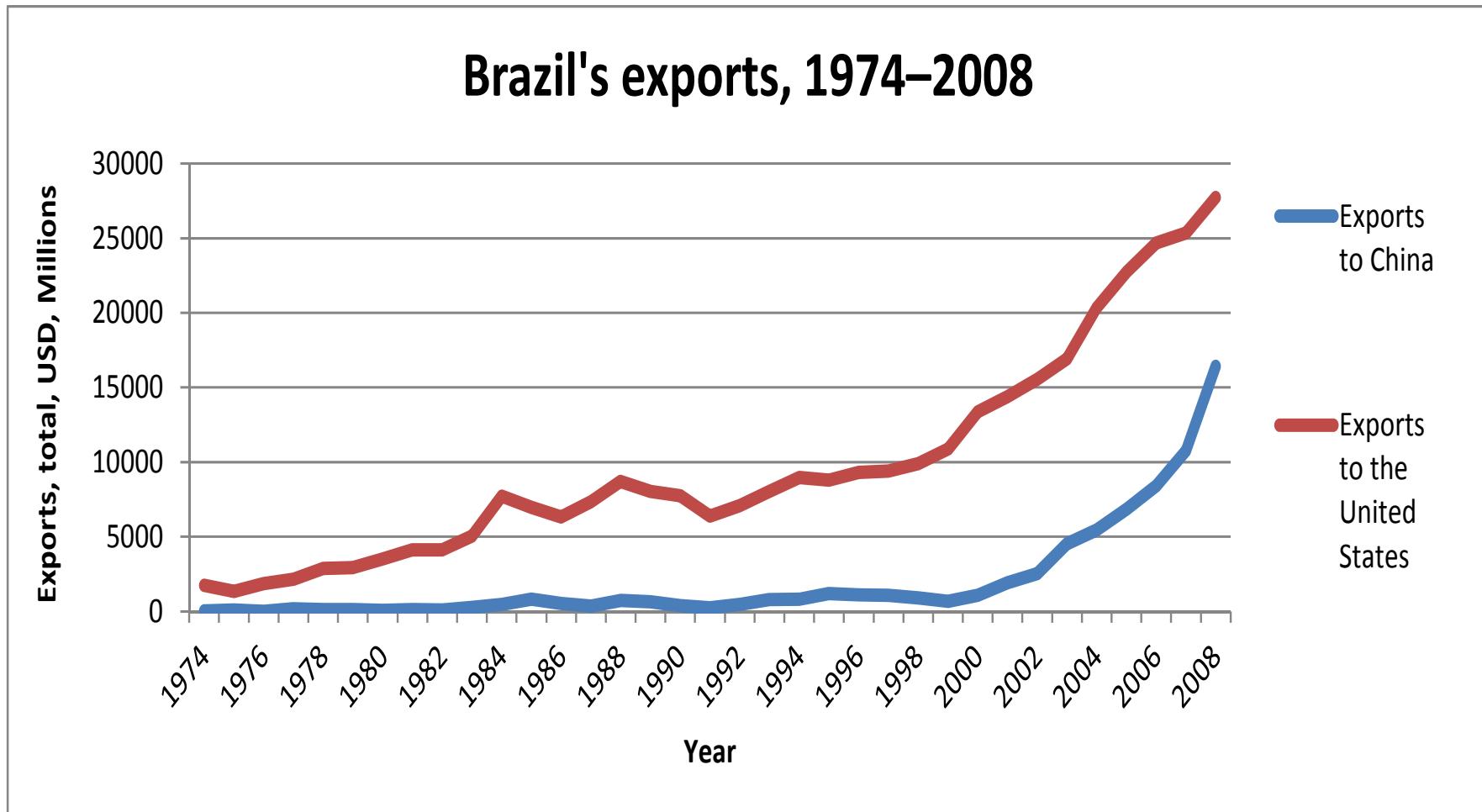


Figure 9. Brazil's exports, 1974–2008

Brazil's exports to the United States and China, as a percentage of Brazil's total exports, 1974–2008

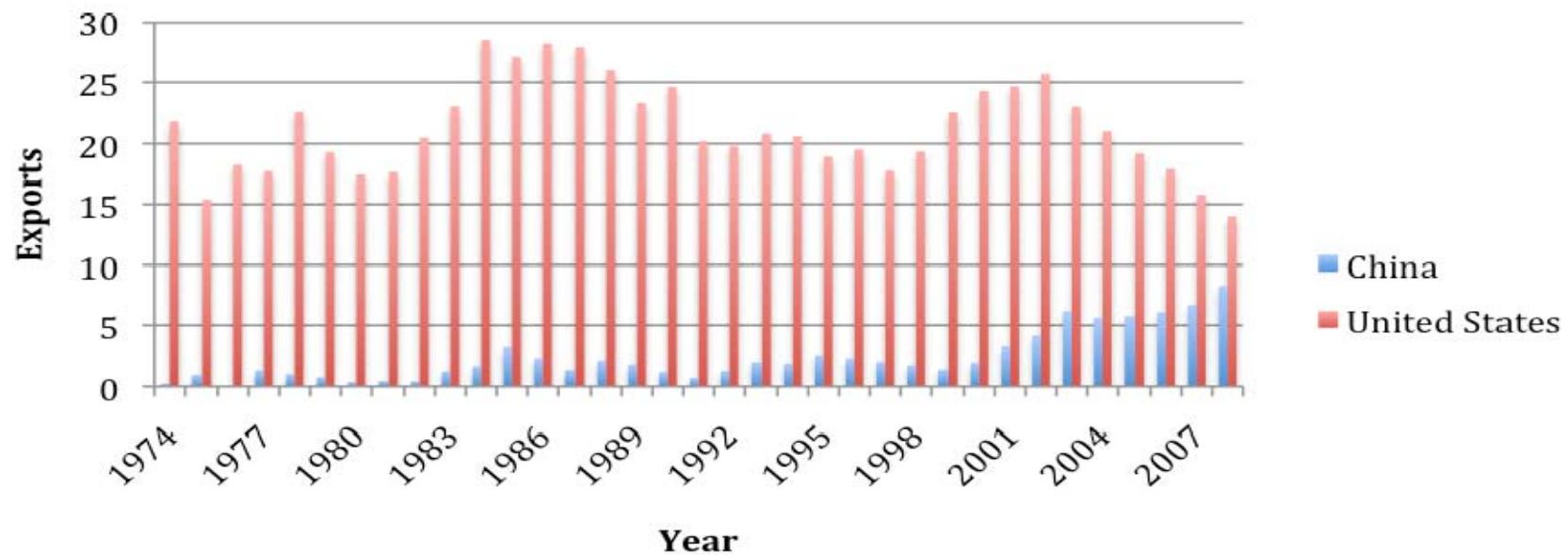


Figure 10. Brazil's exports to the U.S. and China, as a percentage of Brazil's total exports, 1974–2008

Growth rates in % of Brazilian exports, 1975–2008

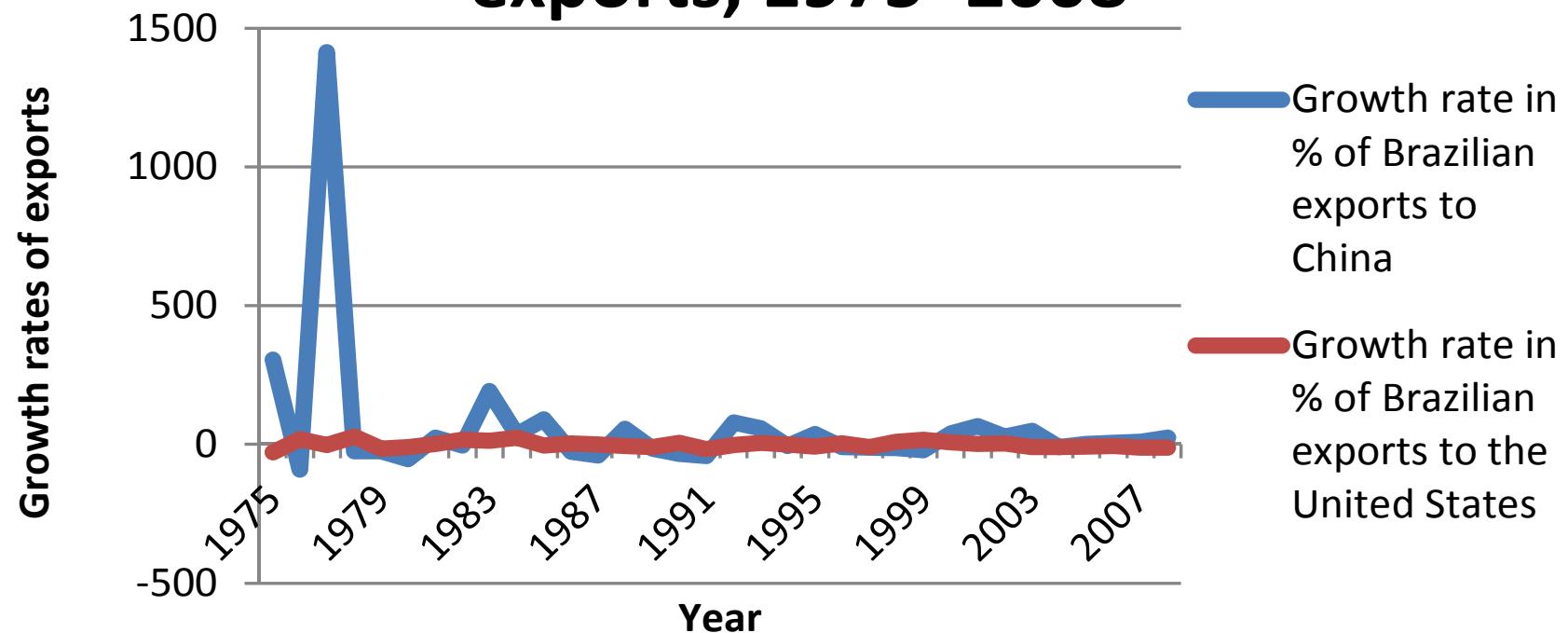


Figure 11. Growth rates in % of Brazilian exports, 1975–2008

U.S. military and economic assistance to Brazil, 1974–2008

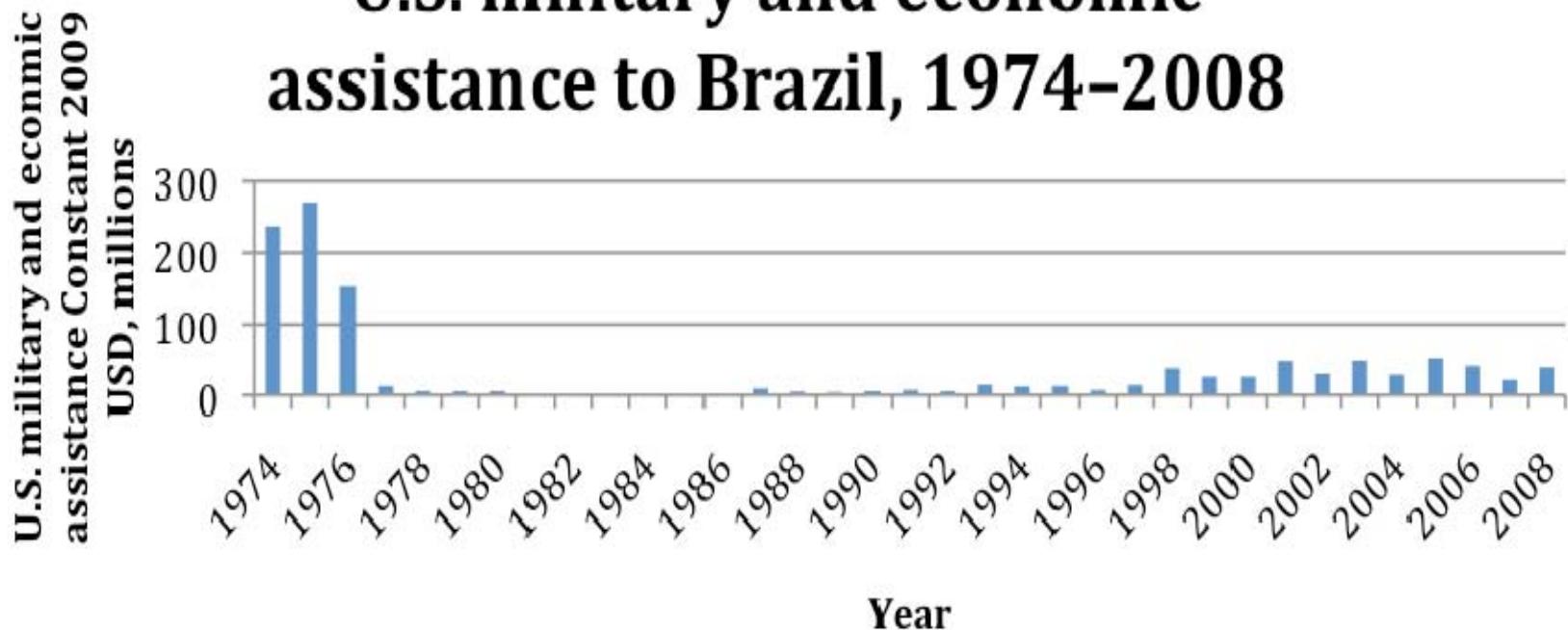


Figure 12. U.S. military and economic assistance to Brazil, 1974–2008

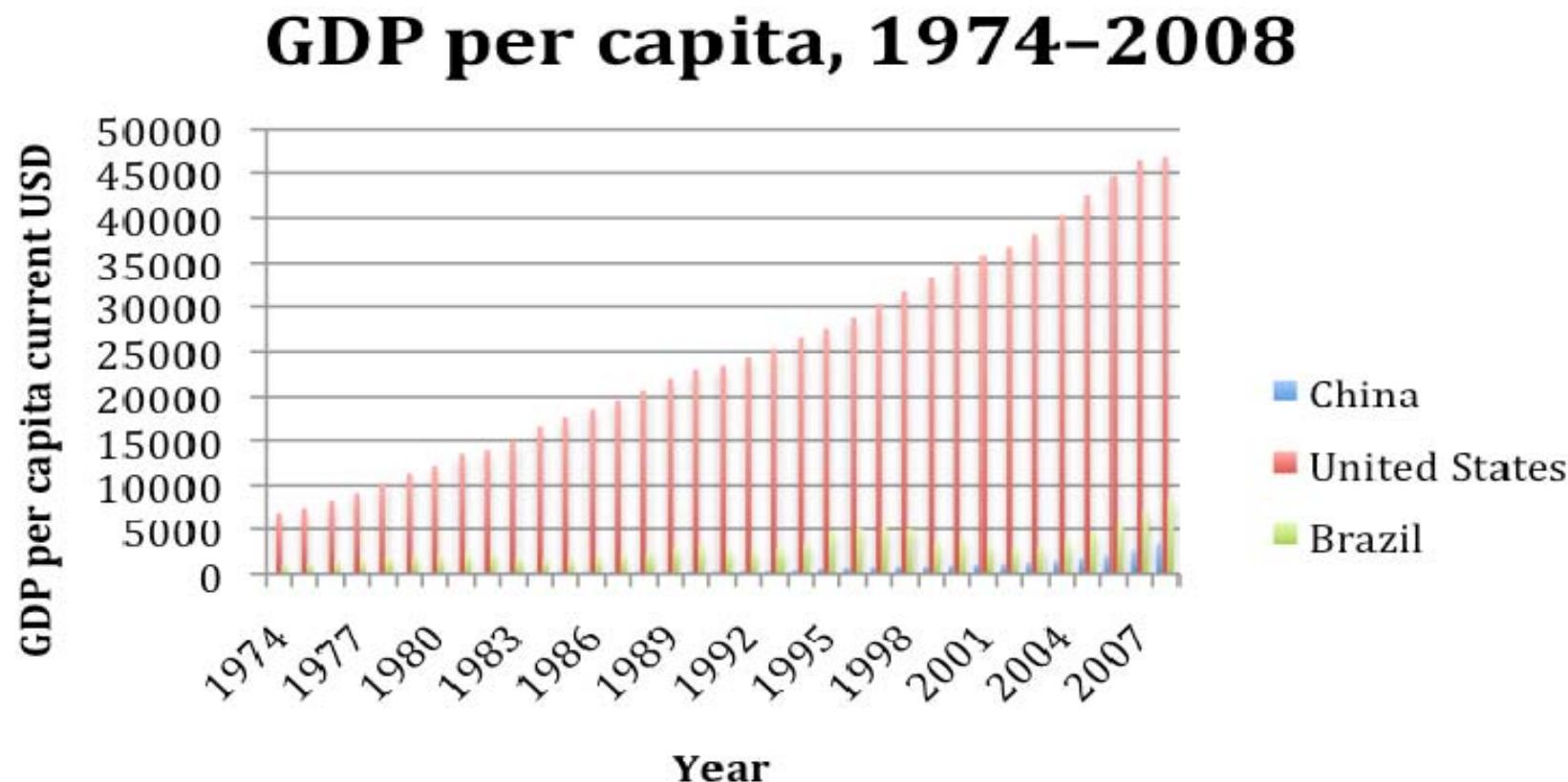


Figure 13. GDP per capita, 1974–2008

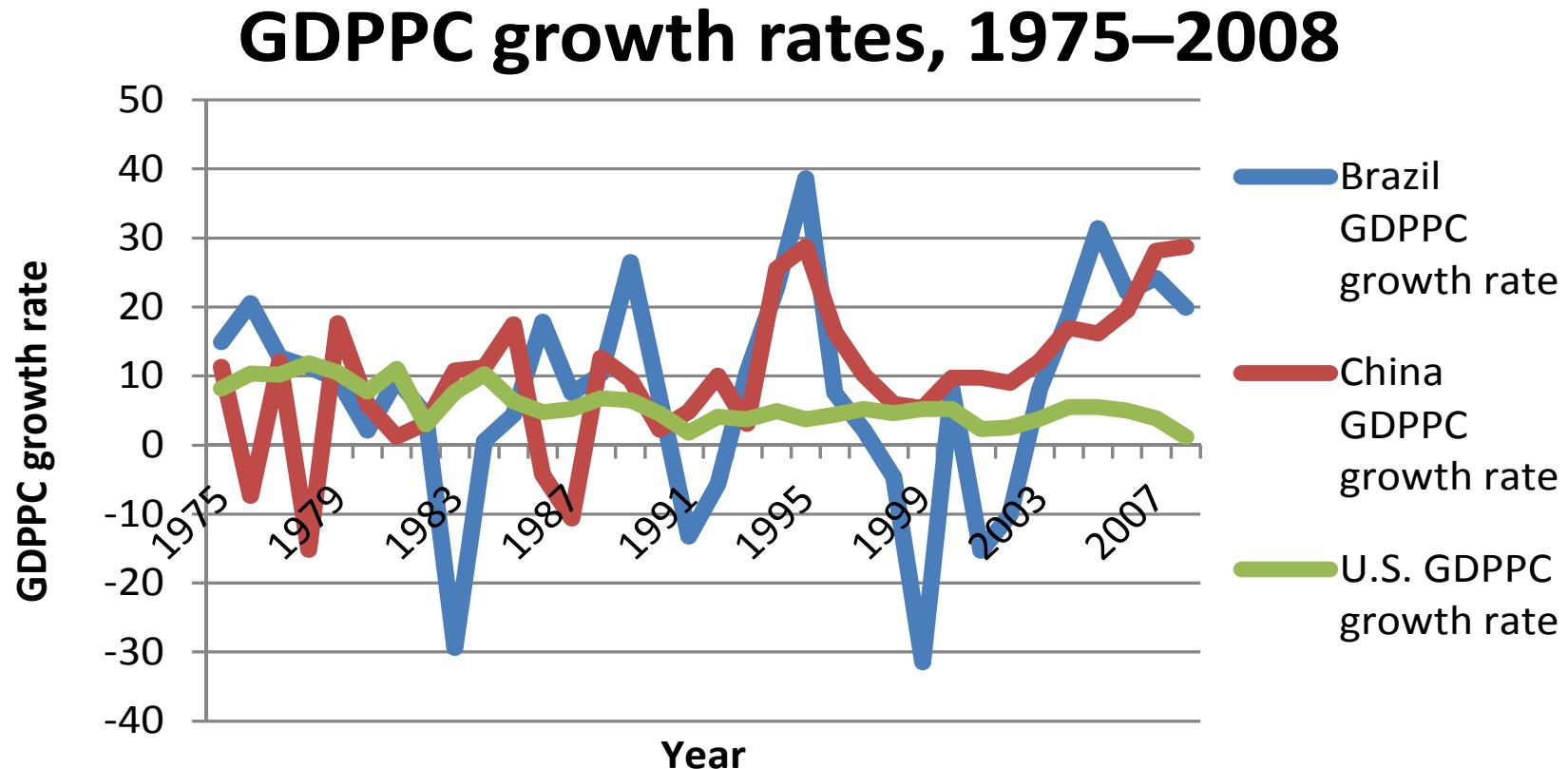


Figure 14. GDPPC growth rates, 1975–2008

U.S.-Brazilian voting affinity, 1974–2008

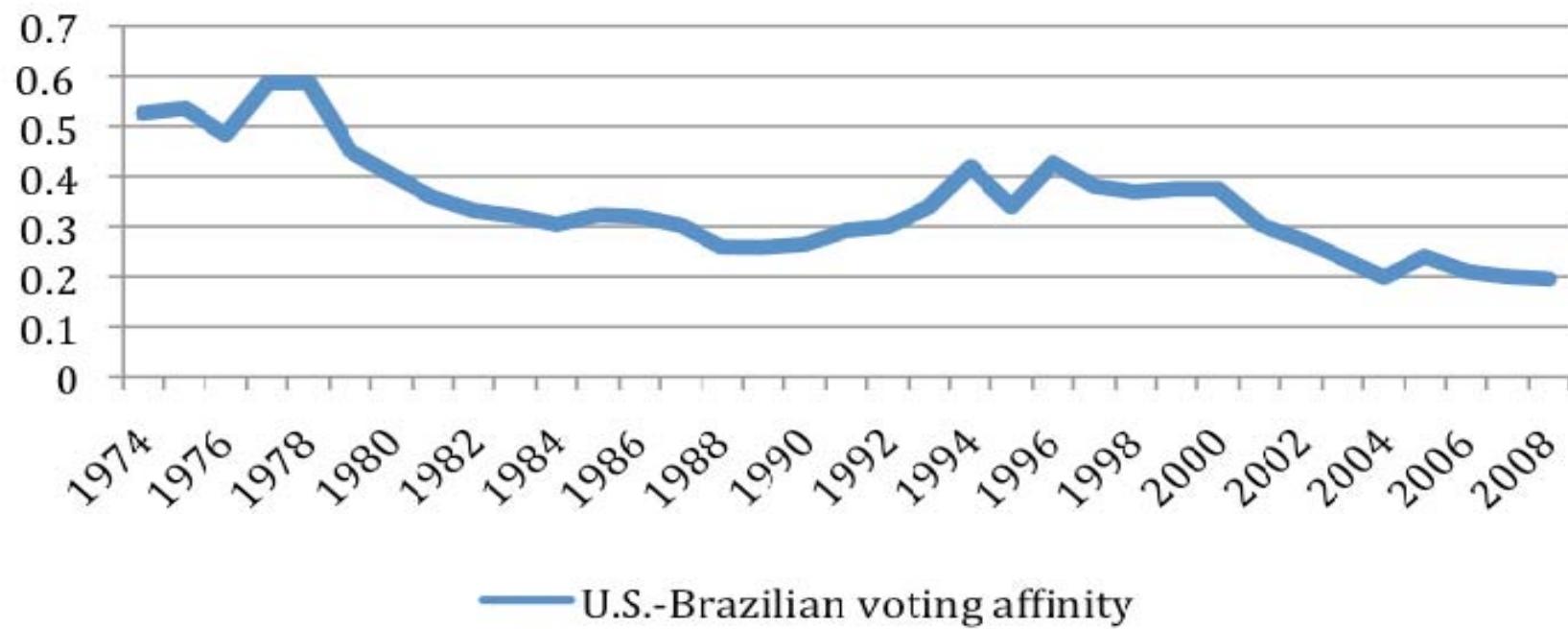


Figure 15. U.S. Brazilian voting affinity, 1974–2008

Sino-Brazilian voting affinity, 1974–2008

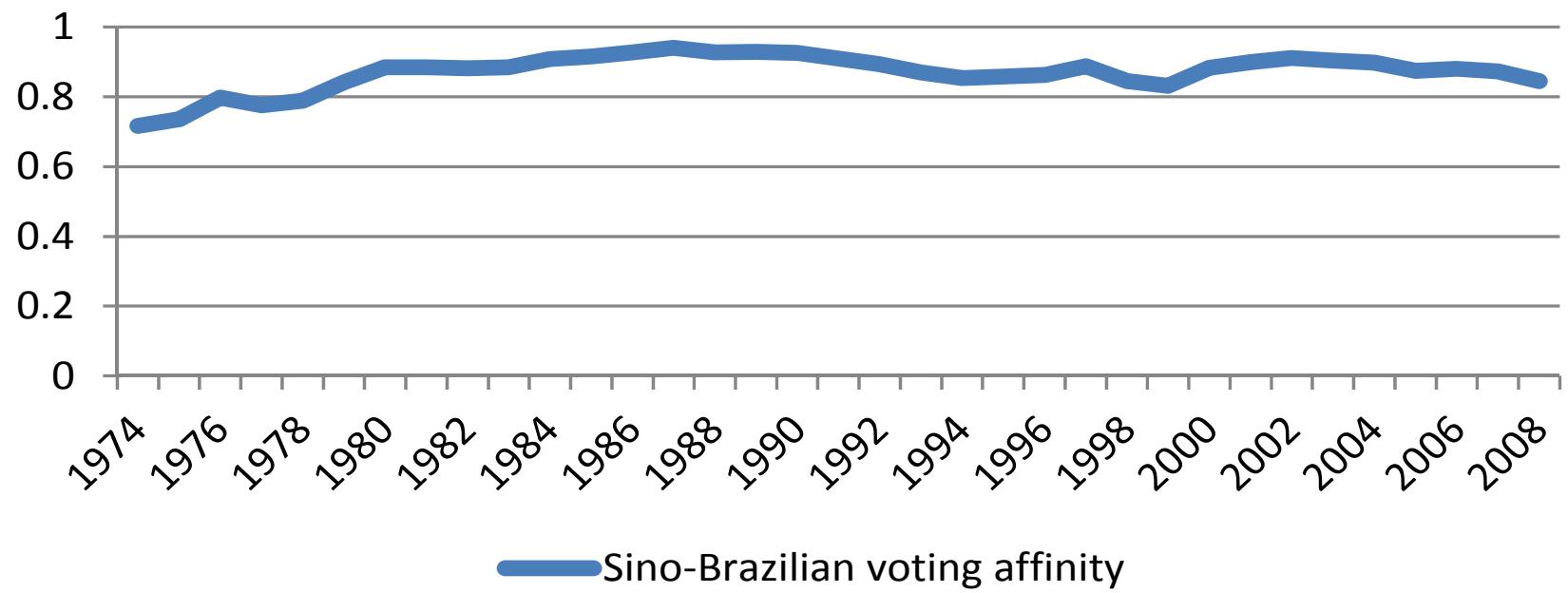


Figure 16. Sino-Brazilian voting affinity, 1974–2008

Table 1. Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Primary measure of Sino-U.S. voting affinity	35	0.30	0.10	0.14	0.52
Primary measure of Sino-Brazilian voting affinity	35	0.87	0.05	0.72	0.94
Primary measure of U.S.-Brazilian voting affinity	35	0.35	0.11	0.20	0.59
Secondary measure of Sino-Brazilian voting affinity	35	0.76	0.09	0.51	0.88
Secondary measure of U.S.-Brazilian voting affinity	35	0.19	0.08	0.09	0.37
Secondary measure of Sino-U.S. voting affinity	35	0.13	0.04	0.05	0.22
Brazil FDI, net inflows (% GDP)	34	1.54	1.35	0.13	5.08
China FDI, net inflows (% of GDP)	27	2.89	1.91	0.21	6.25
United States FDI, net inflows (% of GDP)	35	0.98	0.77	0.14	3.25
Brazil FDI, net outflows (% of GDP)	34	0.28	0.52	-0.41	2.59
China FDI, net outflows (% of GDP)	27	0.33	0.31	-0.01	1.18
United States FDI, net outflows (% of GDP)	35	1.05	0.73	-0.03	2.96
Brazil GDP (current US\$)	35	5.08E+11	3.57E+11	1.05E+11	1.65E+12
China GDP (current US\$)	35	8.82E+11	1.03E+12	1.42E+11	4.52E+12
United States GDP (current US\$)	35	6.65E+12	3.85E+12	1.49E+12	1.43E+13
Brazil GDPPC (current US\$)	35	3.13E+03	1.75E+03	9.95E+02	8.63E+03
China GDPPC (current US\$)	35	710.2823	763.141	154.9721	3413.588
United States GDPPC (current US\$)	35	2.47E+04	1.20E+04	6.95E+03	4.70E+04
Brazil population, total	35	1.51E+08	2.64E+07	1.06E+08	1.92E+08
China population, total	35	1.13E+09	1.36E+08	9.00E+08	1.32E+09
United States population, total	35	2.56E+08	2.80E+07	2.14E+08	3.04E+08
Brazil, goods, value of exports, USD (total)	35	4.88E+04	4.40E+04	7.95E+03	1.98E+05
China, goods, value of exports, USD (total)	35	2.26E+05	3.53E+05	6.94E+03	1.43E+06
United States, goods, value of exports, USD (total)	35	4.84E+05	3.20E+05	9.94E+04	1.30E+06

Variable	Obs	Mean	Std. Dev.	Min	Max
Brazil, goods, value of imports, USD (total)	35	4.17E+04	3.64E+04	1.33E+04	1.82E+05
China, goods, value of imports, USD (total)	35	1.95E+05	2.85E+05	6.66E+03	1.13E+06
United States, goods, value of imports, USD (total)	35	7.46E+05	5.86E+05	1.06E+05	2.17E+06
Brazil, goods, value of exports to China (USD, millions)	35	2.00E+03	3.56E+03	8.98E+00	1.64E+04
Brazil, goods, value of exports to United States (USD, millions)	35	9.78E+03	7.12E+03	1.33E+03	2.77E+04
Brazil, goods, value of imports from China (USD, millions)	35	2.07E+03	4.47E+03	3.30E-01	2.20E+04
Brazil, goods, value of imports from United States (USD, millions)	35	8.61E+03	6.17E+03	2.78E+03	2.84E+04
Brazil's exports to China as a % of total exports	35	2.42	2.09	0.09	8.29
Brazil's exports to United States as a % of total exports	35	2.13E+01	3.78E+00	1.40E+01	2.86E+01
Brazil's imports from China as a % of total imports	35	2.73	3.05	0.00	12.09
Brazil's imports from United States as a % of total imports	35	21.89	3.24	15.59	27.31
China, goods, value of exports to Brazil (USD, millions)	31	1.95E+03	3.96E+03	8	1.88E+04
China, goods, value of exports to United States (USD, millions)	31	4.82E+04	7.21E+04	2.71E+02	2.53E+05
China, goods, value of imports from Brazil (USD, millions)	31	3.45E+03	6.46E+03	63.2	2.96E+04
China, goods, value of imports from United States (USD, millions)	31	1.93E+04	2.10E+04	7.21E+02	8.17E+04
United States, goods, value of exports to Brazil (USD, millions)	35	9.01E+03	7.20E+03	2.49E+03	3.29E+04
United States, goods, value of exports to China (USD, millions)	35	1.41E+04	1.84E+04	1.35E+02	7.15E+04
United States, goods, value of imports from Brazil (USD, millions)	35	1.08E+04	8.02E+03	1.62E+03	3.21E+04
United States, goods, value of imports from China (USD, millions)	35	7.16E+04	1.03E+05	1.23E+02	3.56E+05

Variable	Obs	Mean	Std. Dev.	Min	Max
U.S. economic assistance, total, obligations in millions to Brazil, constant 2009 \$US	35	17.84	17.33	0.06	64.54
U.S. military assistance, total, obligations in millions to Brazil, constant 2009 \$US	22	25.83	63.42	0.03	221.66
U.S. economic and military assistance, total, obligations in millions to Brazil, constant 2009 \$US	35	34.08	61.75	0.06	271.59
U.S. economic assistance, total, obligations in millions to China constant 2009 \$US	23	23.22	28.84	0.21	104.97
Approximated Chinese OFDI into Brazil (millions of \$US)	19	76.17	119.55	0.00	462.03
Natural log US economic assistance, total, obligations in millions to Brazil, constant 2009 \$US	35	2.21	1.48	-2.81	4.17
Natural log of US military assistance, total, obligations in millions to Brazil, constant 2009 \$US	22	-0.34	2.64	-3.51	5.40
Natural log of US economic and military assistance, total, obligations in millions to Brazil, constant 2009 \$US	35	2.40	1.70	-2.81	5.60
Natural log Brazil GDPPC (current US\$)	35	7.91	0.52	6.90	9.06

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IV. RESULTS

A. INTRODUCTION

Chapter III of this thesis reviewed available data, data sources, and hypotheses and developed an estimation strategy to evaluate the hypotheses. This chapter tests for heteroscedasticity, serial correlation, and employs OLS regression analysis to the econometric model as seen in Chapter III. Additionally, this chapter corrects for serial correlation and heteroscedasticity using a Newey-West correction technique. Chapter IV reports the results and interprets them in the context of the thesis and the econometric model. The final chapter of this thesis, Conclusions, will offer insight into the results and will make suggestions for lines of future research.

B. ECONOMETRIC ISSUES

As this thesis employs time series data from different countries, it needs to address two potential econometric issues: heteroscedasticity and serial correlation. Heteroskedasticity occurs when “the variance of the error term, given the explanatory variables, is not constant.”¹⁷⁷ If this thesis does not control for the presence of heteroscedasticity, then it will bias the standard errors in an unknown direction; “this in turn leads to a bias in test statistics and confidence intervals.”¹⁷⁸ The other potential econometric issue is the presence of serial correlation. Serial correlation implies that there is correlation “between the errors in different time periods.”¹⁷⁹ If this thesis does not correct for the presence of serial correlation, then “the OLS estimates of the standard errors will be smaller than the true standard errors. This will lead to the conclusion that the parameter estimates are more precise than they really are. There will be the tendency to reject the null hypothesis when it should not be rejected.”¹⁸⁰ This section tests for

¹⁷⁷ Jeffrey M. Wooldridge. *Introductory Econometrics: A Modern Approach*. (Mason, OH: South-Western, 2003).

¹⁷⁸ Richard Williams, “Heteroscedasticity,” Sociology 63993: Graduate Statistics II. University of Notre Dame, 2011, <http://www.nd.edu/~rwilliam/stats2/l25.pdf> (accessed December 4, 2011).

¹⁷⁹ Ibid.

¹⁸⁰ Ibid.

these issues and proposes corrections before proceeding to the estimation of international trade and U.S. aid's impact on voting affinity.

This thesis employs the Breusch-Pagan¹⁸¹/ Cook Weisberg¹⁸² test for heteroscedasticity using Equation (1) from Chapter III, built into STATA as the command `hetest`, to determine if it is in fact present.¹⁸³ Conducting the test for heteroscedasticity on the primary measure of Sino-Brazilian voting affinity demonstrates that the $\text{chi2}(1) = 0.33$, with $\text{prob} > \text{chi2} = 0.567$. These results fail to reject the null hypothesis that heteroscedasticity is not present. The U.S.-Brazilian primary measure of voting affinity has a $\text{chi2}(1) = 2.80$, with $\text{prob} > \text{chi2} = 0.094$; this rejects the null hypothesis at the 10% level. The secondary measure of Sino-Brazilian voting affinity has a $\text{chi2}(1) = 0.30$, with $\text{prob} > \text{chi2} = 0.583$; this fails to reject the null hypothesis. The secondary measure of U.S.-Brazilian voting affinity has a $\text{chi2}(1) = 3.16$, with a $\text{prob} > \text{chi2} = 0.075$; this rejects the null hypothesis at the 10% level. Given that two of the four measures of voting affinity fail to reject the null hypothesis, heteroscedasticity appears to be present. To control for these effects, this thesis uses alternative estimators of the standard errors. Given that the White variance covariance correction for heteroscedasticity¹⁸⁴ is equivalent to the Newey-West correction at lag 0, this thesis utilizes the Newey-West correction to correct the standard errors.

Given time series data are often serially correlated, this thesis also tests for the presence of autocorrelation in the residuals (or prediction errors) using the Durbin-Watson Statistic. The Durbin-Watson Statistic has the null hypothesis that the errors are serially independent (e.g., not autocorrelated)¹⁸⁵ The results of the Durbin-Watson

¹⁸¹ Trevor Breusch and Adrian Pagan, "A Simple Test for Heteroscedasticity and Random Coefficient Variation," *Econometrica* 47, no. 5 (September 2009): 1287–1294.

¹⁸² R. Dennis Cook and Sanford Weisberg, "Diagnostics for Heteroscedasticity in Regression," *Biometrika* 70, no. 1 (1983): 1–10.

¹⁸³ Richard Williams, "Heteroscedasticity," Sociology 63993: Graduate Studies II. University of Notre Dame, 2011, <http://www.nd.edu/~rwilliam/stats2/l25.pdf> (accessed December 4, 2011).

¹⁸⁴ Halbert White, "A Heteroscedasticity-Consistent Covariance Matrix Estimator and a Direct Test for Heteroscedasticity," *Econometrica* 48, (1980): 817–838.

¹⁸⁵ Jeffrey M. Wooldridge. *Introductory Econometrics: A Modern Approach*. (Mason, OH: South-Western, 2003).

Statistic reject the null hypothesis at the 1% level for both primary measures of Sino-Brazilian ($d\text{-stat} = 0.96$) and U.S.-Brazilian voting affinity ($d\text{-stat} = 0.97$), and for the secondary measure of Sino-Brazilian voting affinity ($d\text{-stat} = 0.95$). Similarly, the results reject the null hypothesis at the 5% level for the secondary measure of U.S.-Brazilian voting affinity ($d\text{-stat} = 1.15$). Given the presence of serial correlation as well as heteroscedasticity, this thesis uses the Newey-West correction at lag 1. The corrected standard errors appear in parentheses in the tables below.

C. EMPIRICAL RESULTS REGARDING THE SINO-BRAZILIAN RELATIONSHIP

Turning first to the question of whether international trade influences voting affinity, this thesis finds evidence suggesting that Brazilian exports to China impact Brazil's UNGA voting behavior (See Table 2), but only a weak and small effect. The estimated coefficient for Brazil's exports to China as a percentage of Brazil's total exports is positive and barely significant at the 10% level for both measures of voting affinity. This result is consistent across the two different measures of voting affinity. The coefficients of 0.016 and 0.028 indicate that a 1% increase in the ratio of Brazil's exports to China to total Brazilian exports increases Brazil's voting affinity by approximately 1.6–2.8 percent, depending on the measurement of voting affinity.

When the model considers Brazil's imports from China as a percentage of Brazil's total imports, however, the results are negative and not significant, using both measures of voting affinity. As this thesis is unable to reject the null hypothesis that the estimated coefficient for imports is statistically different from zero, this thesis can make no inferences about the sign or magnitude of this coefficient. This thesis recognizes it is curious that exports appear to influence voting affinity while imports do not. Whether or not this result is extendable to additional countries in Latin America is a question for future research.

The results suggest that U.S. military and economic assistance to Brazil impacts Sino-Brazilian voting affinity. The estimated coefficient for U.S. military and economic assistance to Brazil is negative and significant at the 1% level and is consistent across

both measures of voting affinity. The coefficients of -0.022 and -0.037 indicate that a 1% increase in U.S. military and economic assistance to Brazil decreases Brazil's voting affinity with China between 2.2–3.7 percent, depending on voting affinity measure. This finding is consistent with both the literature discussed in Chapter II, where it shows that the United States has the tendency to buy UNGA votes, and with U.S. practices given the U.S. State Department's identification of key votes.

The results also suggest that Brazil's per capita GDP influences Sino-Brazilian voting affinity. The estimated coefficient for Brazil's per capita GDP is positive and significant at the 10% and at the 5% level for the primary and secondary measure of voting affinity, respectively. The coefficients of 0.036 and 0.079 indicate that a 1% increase in Brazil's per capita GDP increases Sino-Brazilian voting affinity by 3.6–7.9 percent, depending on voting affinity measure. Quite possibly, given their South-South connection with China, Brazil's world view and thus their UNGA voting, aligns more closely with China than with other, more developed countries, such as the United States. With a rise in Brazil's per capita GDP, consequently, Brazil may feel more able to vote their conscience. Brazil's increased level of economic wealth may give them the confidence to vote in alignment with perhaps less popular nations, such as China. As indicated in Chapter III, however, this thesis uses GDPPC to represent the level of economic development in the econometric model; GDPPC's influence on voting affinity is not among the five hypotheses of interest.

As Chapter III previously indicated, too few observations exist for the inclusion of FDI in the estimation strategy. Tables 4 and 5 contain the results of the simple correlations for both the primary and secondary, respectively, measures of Sino-Brazilian voting affinity. Looking at the primary method of voting affinity, the results indicate that there is a weak, negative relationship for all of the IVs: Brazil's exports to China (as a percentage of Brazil's total exports), Brazil's imports from China (as a percentage of Brazil's total imports), U.S. aid, Brazil's per capita GDP, and Chinese FDI into Brazil (as a percentage of Brazil's total inward FDI). This suggests that an increase in exports, imports, U.S. aid, GDPPC, or FDI will result in a corresponding decrease in Sino-Brazilian voting affinity. Looking at the secondary method of voting affinity, the results

indicate that there is a weak, negative relationship for many of the IVs: Brazil's imports from China (as a percentage of Brazil's total imports), U.S. aid, and Brazil's per capita GDP. This suggests that as imports, U.S. aid, and GDPPC increase, there will be a corresponding decrease in Sino-Brazilian voting affinity. Brazil's exports to China (as a percentage of Brazil's total exports) and Chinese FDI into Brazil (as a percentage of Brazil's total inward FDI), however, have a weak, positive correlation to Sino-Brazilian voting affinity. This suggests that as exports and Chinese FDI increase, there will be a corresponding increase in Sino-Brazilian voting affinity.

D. EMPIRICAL RESULTS REGARDING THE U.S.-BRAZILIAN RELATIONSHIP

Table 3 reports the results of U.S.-Brazilian voting affinity using both the primary and secondary measure of voting affinity. Table 2's results are distinctly different from those reported in Table 3, which lends itself to an interesting discussion regarding Brazil's UNGA voting and subsequent foreign policy.

The results indicate that Brazil's exports to the United States, as a percentage of Brazil's total exports, influence U.S.-Brazilian voting coincidence. The estimates coefficients are negative and strongly significant at the 1% level across both measures of voting affinity. The coefficients of -0.015 and -0.011 indicate that a 1% increase in Brazil's exports to the United States decreases U.S.-Brazilian voting affinity by 1.1–1.5 percent, depending on measure of voting affinity. These results, while highly significant, are in stark contrast to the Sino-Brazilian voting affinity, which saw a positive relationship between Brazil's exports and voting affinity. What might explain this negative relationship? Perhaps Brazil's corporate entities influence Brazilian politicians' votes in the UNGA or perhaps Brazilian politicians think of Brazil's relationship with the United States as a thing of the past, while its relationship with China, especially in the context of the BRICs is continuing to grow. While interesting, this is beyond the scope of the thesis, which is primarily concerned with the Sino-Brazilian voting relationship.

The results indicate that Brazil's imports from the United States, as a percentage of their total imports, influences U.S.-Brazilian voting affinity. The estimated coefficients

are positive and significant at the 1% level across both measure of voting affinity. Both coefficients of 0.013 indicate that a 1% increase in Brazil's exports to the United States increases U.S.-Brazilian voting affinity by 1.3% for each measure of voting affinity. This suggests that Brazil's reliance on U.S. imports increases their likelihood to vote in accordance with the United States, which one might expect. A further discussion of this, however, is beyond the scope of the thesis.

When the model considers the relationship between U.S. military and economic assistance to Brazil and U.S.-Brazilian voting affinity however, the results are negative and not significant, across both measures of voting affinity. Given the lack of significance, this thesis is unable to ascertain what exactly is the relationship between U.S. military and economic assistance and U.S.-Brazilian voting affinity.

The results indicate that Brazil's per capita GDP influence U.S.-Brazilian voting affinity. The estimated coefficients are negative and significant at the 1% level for the primary measure of voting affinity and insignificant for the secondary measure of voting affinity. The coefficients of -0.122 and -0.030 indicate that a 1% increase in Brazil's per capita GDP will decrease U.S.-Brazilian voting affinity by 12.2%. Perhaps as Brazil's GDPPC increase, they feel sufficiently independent to vote as they please, rather than feeling the need to vote in alignment with the United States. Again, this thesis is not concerned with Brazil's GDPPC relationship with U.S.-Brazilian voting affinity; it is not one of the five main hypotheses.

Tables 6 and 7 contain the results of the simple correlations for both the primary and secondary measures, respectively, of U.S.-Brazilian voting affinity. Looking at the primary method of voting affinity, the results indicate that there is a relatively weak, negative relationship for U.S. aid, Brazil's per capita GDP, and Chinese FDI into Brazil (as a percentage of Brazil's total inward FDI). This suggests that as U.S. aid, Brazil's GDPPC, and Chinese FDI increase, U.S.-Brazilian voting affinity is decreasing. Brazil's exports to the United States (as a percentage of Brazil's total exports) and Brazil's imports from the United States (as a percentage of Brazil's total imports) has a positive, weak relationship to U.S.-Brazilian voting affinity. This suggests that as Brazil's imports from and exports to the United States increase, U.S.-Brazilian voting affinity decreases.

Looking at the secondary measure of U.S.-Brazilian voting affinity, demonstrates similar results; all but the exports to (and imports from) the United States show a weak, negative relationship with U.S.-Brazilian voting affinity. This means that an increase in U.S. aid, Brazil's GDPPC, and Chinese FDI results in a decrease in U.S.-Brazilian voting affinity.

E. CONCLUSIONS

Chapter III outlines five separate hypotheses to be explored in this thesis. This section reviews the results and discusses whether the results can reject the hypotheses.

1. Hypothesis One

All else being equal, a change in the level of exports from Brazil to China, as measured by the ratio of Brazilian exports to China to total Brazilian exports, may significantly influence Brazil's UNGA voting affinity with China. Given the results reported in Table 2, this thesis rejects the null hypothesis. It appears that Brazil's exports to China have a statistically significant, positive relationship to Sino-Brazilian voting affinity. One might expect these results, as Brazil may want to vote in alignment with a growing economic partner, such as China. Thus, Brazil and China are likely to form a stronger political relationship as Brazil's exports to China increase.

While clearly a less robust measure of the relationship between the ratio of Brazil's exports to China and the primary measure of Sino-Brazilian voting affinity, it is perhaps worthy of reiteration that a weak, negative relationship exists between Brazil's exports to China and Sino-Brazilian voting affinity, which is unexpected. A weak, positive relationship, however, exists between the ratio of Brazil's export to China and the secondary measure of voting Sino-Brazilian voting affinity; this is in keeping with both the regression results and what we might expect of the relationship.

2. Hypothesis Two

All else being equal, a change in the level of imports from China to Brazil, as measured by the ratio of Brazilian imports from China to total Brazilian imports, may significantly influence Brazil's UNGA voting affinity with China. Given the lack of statistically significant results on the relationship between Brazil's imports from China

and their level of voting affinity, this thesis fails to reject the null hypothesis, lending little insight into the relationship between the two. The correlations indicate, however, that the ratio of Brazil's imports to their total imports has a weak, negative relationship to both the primary and secondary measures of Sino-Brazilian voting affinity.

While the correlation is a less robust measurement of the relationship, the results are unexpected. It is conceivable that as Brazil imports more from China (as a percentage of Brazil's total imports) that they become more politically involved and thus feel more comfortable voting against China in the UNGA. After all, Brazil controls whether or not and at what level they import from China.

3. Hypothesis Three

All else being equal, a change in the level of Chinese FDI in Brazil, as measured by the ratio of Chinese FDI to total FDI in Brazil, may significantly influence Brazil's UNGA voting affinity with China. Given a distinct lack of available data on Chinese FDI into Brazil, dropping FDI from the regression became necessary to reach a sufficient number of observations. Unfortunately, this means that this thesis cannot comment on the relationship between Chinese FDI into Brazil and Sino-Brazilian voting affinity. Perhaps as data become available, this will be a valid future research question.

The correlation suggests, however that there is a weak, negative relationship between Chinese FDI into Brazil (as a percentage of Brazil's total inward FDI) and the primary measure of Sino-Brazilian voting affinity. Using the second measure of Sino-Brazilian voting affinity, however, suggests a weak, positive relationship with Chinese FDI into Brazil. The disparity between the different measures of voting affinity is curious. Given the literature on FDI, one might expect a positive relationship between FDI and voting affinity as higher levels of investment may incentivize similar voting in the UNGA.

4. Hypothesis Four

All else being equal, a change in the level of U.S. aid to Brazil, as measured by U.S. economic and military assistance to Brazil, may significantly influence Brazil's

UNGA voting affinity with China. Given the results reported in Table 2, this thesis rejects the null hypothesis; results suggests that U.S. military and economic assistance to Brazil have a negative, statistically significant relationship to Sino-Brazilian voting affinity. This result largely makes sense as the literature suggests that the United States can often influence UNGA voting, especially on those votes which the U.S. State Department indicates are key votes; the United States directly links U.S. aid to the voting outcomes on these key votes.

5. Hypothesis Five

All else being equal, a change in the level of U.S. aid to Brazil, as measured by U.S. economic and military assistance to Brazil, may significantly influence Brazil's UNGA voting affinity with the United States. Given the lack of statistically significant results on the relationship between U.S. economic and military assistance to Brazil and U.S.-Brazilian voting affinity, this thesis fails to reject the null hypothesis. This is interesting, as the literature tends to support the idea that the United States purchases UNGA votes. Perhaps a larger sample size would lend insight into this phenomenon.

Table 2. Sino-Brazilian voting affinity

	Primary measure of voting affinity between Brazil and China	Secondary measure of voting affinity between Brazil and China
Brazil's exports to China as a percentage of Brazil's total exports	0.016* (0.008)	0.028* (0.013)
Brazil's imports from China as a percentage of Brazil's total imports	-0.009 (0.005)	-0.014 (0.009)
U.S. aid to Brazil (military and economic assistance)	-0.022*** (0.004)	-0.037*** (0.006)
Brazil's GDPPC	0.036* (0.018)	0.079** (0.027)
Number of observations	35	35
R-squared	0.5306	0.5542

Quantities in parentheses are Newey-West lag 1 corrected standard errors.
* significant at 10% level; ** significant at the 5% level; *** significant
at the 1% level.

Table 3. U.S.-Brazilian voting affinity

	Primary measure of voting affinity between Brazil and the United States	Secondary measure of voting affinity between Brazil and the United States
Brazil's exports to the United States as a percentage of Brazil's total exports	-0.015*** (0.004)	-0.011*** (0.003)
Brazil's imports from the United States as a percentage of Brazil's total imports	0.013*** (0.006)	0.013*** (0.005)
U.S. aid to Brazil (military and economic assistance)	-0.007 (0.011)	-0.007 (0.008)
Brazil's GDPPC	-0.122*** (0.029)	-0.030 (0.024)
Number of observations	35	35
R-squared	0.6128	0.3835

Quantities in parentheses are Newey-West lag 1 corrected standard errors.

* significant at 10% level; ** significant at the 5% level; *** significant at the 1% level.

Table 4. Correlations for primary measure of Sino-Brazilian voting affinity

	Primary measure of Sino-Brazilian voting affinity	Brazil's exports to China as a % of total exports	Brazil's imports from China as a % of total imports	Natural log of U.S. economic and military assistance, total, obligations in millions to Brazil, constant 2009 \$US	Natural log Brazil GDPPC (current US\$)	Chinese FDI into Brazil as a % of Brazil's total inward FDI
Primary measure of Sino-Brazilian voting affinity	1					
Brazil's exports to China as a % of total exports	-0.05	1.00				
Brazil's imports from China as a % of total imports	-0.18	0.94	1.00			
Natural log of U.S. economic and military assistance, total, obligations in millions to Brazil, constant 2009 \$US	-0.20	0.66	0.58	1.00		
Natural log Brazil GDPPC (current US\$)	-0.52	0.29	0.75	0.32	1.00	
Chinese FDI into Brazil as a % of Brazil's total inward FDI	-0.14	0.83	0.82	0.58	0.58	1.00

Table 5. Correlations for secondary measure of Sino-Brazilian voting affinity

	Secondary measure of Sino-Brazilian voting affinity	Brazil's exports to China as a % of total exports	Brazil's imports from China as a % of total imports	Natural log of U.S. economic and military assistance, total, obligations in millions to Brazil, constant 2009 \$US	Natural log Brazil GDPPC (current US\$)	Chinese FDI into Brazil as a % of Brazil's total inward FDI
Secondary measure of Sino-Brazilian voting affinity	1.00					
Brazil's exports to China as a % of total exports	0.10	1.00				
Brazil's imports from China as a % of total imports	-0.00	0.94	1.00			
Natural log of U.S. economic and military assistance, total, obligations in millions to Brazil, constant 2009 \$US	-0.18	0.66	0.58	1.00		
Natural log Brazil GDPPC (current US\$)	-0.30	0.59	0.75	0.32	1.00	
Chinese FDI into Brazil as a % of Brazil's total inward FDI	0.01	0.83	0.82	0.58	0.58	1.00

Table 6. Correlations for primary measure of U.S.-Brazilian voting affinity

	Primary measure of U.S.-Brazilian voting affinity	Brazil's exports to the United States as a % of total exports	Brazil's imports from the United States as a % of total imports	Natural log of U.S. economic and military assistance, total, obligations in millions to Brazil, constant 2009 \$US	Natural log Brazil GDPPC (current US\$)	Chinese FDI into Brazil as a % of Brazil's total inward FDI
Primary measure of U.S.-Brazilian voting affinity	1.00					
Brazil's exports to the United States as a % of total exports	0.23	1.00				
Brazil's imports from the United States as a % of total imports	0.68	0.56	1.00			
Natural log of U.S. economic and military assistance, total, obligations in millions to Brazil, constant 2009 \$US	-0.40	-0.00	-0.37	1.00		
Natural log Brazil GDPPC (current US\$)	-0.23	-0.79	-0.69	0.32	1.00	
Chinese FDI into Brazil as a % of Brazil's total inward FDI	-0.66	-0.48	-0.81	0.58	0.58	1.00

Table 7. Correlations for secondary measure of U.S.-Brazilian voting affinity

	Secondary measure of U.S.-Brazilian voting affinity	Brazil's exports to the United States as a % of total exports	Brazil's imports from the United States as a % of total imports	Natural log of U.S. economic and military assistance, total, obligations in millions to Brazil, constant 2009 \$US	Natural log Brazil GDPPC (current US\$)	Chinese FDI into Brazil as a % of Brazil's total inward FDI
Secondary measure of U.S.-Brazilian voting affinity	1.00					
Brazil's exports to the United States as a % of total exports	0.12	1.00				
Brazil's imports from the United States as a % of total imports	0.51	0.56	1.00			
Natural log of U.S. economic and military assistance, total, obligations in millions to Brazil, constant 2009 \$US	-0.28	-0.00	-0.37	1.00		
Natural log Brazil GDPPC (current US\$)	-0.08	-0.79	-0.69	0.32	1.00	
Chinese FDI into Brazil as a % of Brazil's total inward FDI	-0.47	-0.48	-0.81	0.58	0.58	1.00

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V. CONCLUSION

A. INTRODUCTION

The major research question of this thesis focused on an examination of whether the increased level of Sino-Brazilian trade or investment significantly influenced Brazil's voting in the UNGA, which the literature commonly uses to represent political influence. This question is of importance to the United States for political, economic and national security reasons. Given Brazil's geographic proximity to the United States, the United States often views the regional involvement of other nations, especially that of China, cautiously. Brazil is an important regional player; it is Latin America's most populous nation and has a growing economy. While the United States was Brazil's number one trading partner, in 2009, China overtook the United States. In part for this reason, Brazil increasingly values its economic relations with China. If the Sino-Brazilian economic relationship influences Brazil's foreign policy, as evidenced by their votes in the UNGA, then it may signal an increase in Chinese influence over Brazil. From the U.S. perspective, any increase in Chinese influence may translate into a corresponding decrease in U.S. influence in both Brazil and, given Brazil's importance, in the region as well. A decline in U.S. influence in Brazil could have implications for the health of Brazil's democracy, regional stability and U.S. national security. If the United States loses standing in Brazil, then it could potentially see decreases in its influence elsewhere in the region. This thesis also addressed to what degree, if any, U.S. military and economic assistance influences Brazil's voting affinity with both the United States and with China. If U.S. aid to Brazil bolsters U.S.-Brazilian voting affinity, then perhaps the United States may be able to increase their aid to Brazil to influence additional votes.

B. RECAP OF THESIS STRUCTURE

To examine the above research questions, this thesis began with a brief review of the relevant history pertaining to the UNGA and discussed UNGA voting, its mechanisms and the agenda-setting process. Following an examination of the UNGA, this thesis considered the literature on the determinants of voting, specifically focusing on

the effects of asymmetrical economic relationships, the implications of ideology, and whether trade fosters alliances (or whether alliances foster trade). The thesis then proceeded to review the literature on Sino-Brazilian relations, characterizing them in terms of both their political and their economic interactions. It then discussed the very limited empirical evidence on whether Sino-Brazilian trade or investment influenced the way in which Brazil votes in the UNGA. The thesis then developed an empirical methodology for investigating the influence of international trade (disaggregated into imports and exports), international economic and military assistance and FDI on Sino-Brazilian UNGA voting. It specified five testable hypotheses, described data sources, presented the variables of interest, discussed the empirical model, and provided descriptive statistics on the variables in question. Following a review of the data and methodology, the thesis presented and discussed the results of the OLS regressions and simple correlations, highlighting the econometric issues with the estimator of choice.

C. ADDRESSING A LITERATURE GAP

The methodology used in this thesis offers an improvement over previous studies in the literature, which evaluated the relationship between Sino-Brazilian UNGA voting affinity and trade; previous studies relied on simple correlations. This thesis crafted, for the first time in the literature on Sino-Brazilian relations, an estimable empirical model examining whether trade or investment influences voting behavior between these two nations. The empirical model used the following main variables: UNGA votes, FDI, trade, and U.S. aid. While the model improved past analyses, it is not without its own econometric issues. Given that the thesis employed time series data from different countries, it tested for and ultimately found evidence of both heteroscedasticity and serial correlation; it used the Breusch-Pagan / Cook Weisberg test for heteroscedasticity and the Durbin-Watson Statistic to test for the presence of autocorrelation in the residuals. It then utilized the Newey-West test at lag 1 to correct for the serial correlation.

D. HYPOTHESES AND RESULTS

This thesis made five hypotheses, and tested them with two types of voting affinity measurements for both regression analysis and simple correlations. All else being

equal, this thesis hypothesized the following: (1) a change in the level of exports from Brazil to China, as measured by the ratio of Brazilian exports to China to total Brazilian exports, may significantly influence Brazil's UNGA voting affinity with China; (2) a change in the level of imports from China to Brazil, as measured by the ratio of Brazilian imports from China to total Brazilian imports, may significantly influence Brazil's UNGA voting affinity with China; (3) a change in the level of Chinese FDI in Brazil, as measured by the ratio of Chinese FDI to total FDI in Brazil, may significantly influence Brazil's UNGA voting affinity with China; (4) a change in the level of U.S. aid to Brazil, as measured by U.S. economic and military assistance to Brazil, may significantly influence Brazil's UNGA voting affinity with China; and (5) a change in the level of U.S. aid to Brazil, as measured by U.S. economic and military assistance to Brazil, may significantly influence Brazil's UNGA voting affinity with the United States.

Based on the results of the regression analysis, this thesis rejected the null hypothesis (1), all else being equal, that a change in the level of exports from Brazil to China, as measured by the ratio of Brazilian exports to China to total Brazilian exports, may significantly influence Brazil's UNGA voting affinity with China. Brazil's exports to China had a statistically significant, positive relationship to Sino-Brazilian voting affinity. This outcome is perhaps expected as Brazil may wish to vote in alignment with a growing economic partner, such as China. Thus, Brazil and China are likely to form a stronger political relationship as Brazil's exports to China increase. Interestingly, there was a weak, negative correlation, a less robust measurement, between the ratio of Brazil's exports to China and the primary measure of Sino-Brazilian voting affinity, which is unexpected. A weak, positive correlation, however, occurred between the ratio of Brazil's export to China and the secondary measure of voting Sino-Brazilian voting affinity; this is in keeping with both the regression results and what we might expect of the relationship. What remains unclear is what accounted for the difference between the two calculations.

Due to a lack of statistically significant results, this thesis failed to reject hypothesis (2), that, all else being equal, a change in the level of imports from China to Brazil, as measured by the ratio of Brazilian imports from China to total Brazilian

imports, may significantly influence Brazil's UNGA voting affinity with China. While the correlation is a less robust measurement of the relationship, the results were unexpected. Conceivably, as Brazil imported more from China (as a percentage of their total imports) they became more politically involved and thus felt more comfortable voting against China in the UNGA. Brazil, as the importing country, had control over whether, and at what level, they imported from China; perhaps this emboldened them to vote as they pleased in the UNGA.

This thesis found that for hypothesis (3), all else being equal, a change in the level of Chinese FDI in Brazil, as measured by the ratio of Chinese FDI to total FDI in Brazil, may significantly influence Brazil's UNGA voting affinity with China, however, it was necessary to drop Chinese FDI from the regression to reach a sufficient number of observations to run the econometric model. Given this deficiency, this thesis relied on simple correlations to analyze the relationship between Chinese FDI into Brazil and Sino-Brazilian voting affinity. The correlations indicated that there was a weak, negative relationship between Chinese FDI into Brazil (as a percentage of Brazil's total inward FDI) for the primary method of Sino-Brazilian voting affinity. A weak, positive correlation, however, existed between the secondary measure of Sino-Brazilian voting affinity and Chinese FDI into Brazil (as a percentage of Brazil's total inward FDI). The disparity between the different measures of voting affinity proved interesting. Given the literature on FDI, one may have expected a positive relationship between FDI and voting affinity as higher levels of investment may incentivize similar voting in the UNGA. What remains unclear is why the disparity exists between the two measures of voting affinity; maybe additional data would reconcile the correlations for different voting affinity measures.

This thesis rejected the null hypothesis (4), that a change in the level of U.S. aid to Brazil, as measured by U.S. economic and military aid to Brazil, may significantly influence Brazil's UNGA voting affinity with China; the results indicated that U.S. military and economic assistance to Brazil had a negative, statistically significant relationship to Sino-Brazilian voting affinity. This result fit with the literature, which indicated that U.S. aid can often influence UNGA voting, especially on those votes which

the U.S. State Department indicates are key votes; the United States directly links its aid decisions to the voting outcomes on these key votes.

The thesis failed to reject the null hypothesis (5), that a change in the level of U.S. aid to Brazil, as measured by U.S. economic and military aid to Brazil, may significantly influence Brazil's UNGA voting affinity with the United States, due to a lack of statistically significant results. This is interesting, as the literature tends to support the idea that the United States purchases UNGA votes. Perhaps a larger sample size would lend insight into this phenomenon. What was most interesting about this finding, however, is the fact that while the United States may be able to dissuade Sino-Brazilian voting affinity through economic and military assistance to Brazil, it was not able to bolster its own Brazilian voting affinity through the same measure. What accounts for this distinction? Perhaps Brazil is suspicious of U.S. aid and makes a marked attempt to vote independently of the United States; at the same time, Brazil may feel that voting in alignment with China is a more egregious offense than not voting with the United States. Analyzing the regression results with the addition of a U.S. key votes variable, which are votes that the U.S. State Department ties to its aid allocation decisions, would no doubt be an interesting line of further research.

E. SUGGESTED LINES OF FUTURE RESEARCH

While this thesis only concerned itself with five testable hypotheses for voting affinity within the UNGA, it brought up potentially interesting ideas for further research on voting affinity, both within and outside the UNGA. First, as previously mentioned, it would be compelling to include U.S. key votes as a variable in the regression analysis and compare it to other, non-key votes. One would expect that U.S. key votes would have a higher degree of U.S.-Brazilian voting affinity and a lower degree of Sino-Brazilian voting affinity. Second, given a lack of available data, waiting for China to release additional OFDI data over the next several years would allow for its inclusion in the regression; this would increase the robustness of any findings on the relationship between Chinese FDI into Brazil and Sino-Brazilian voting affinity. Third, it would be interesting to determine whether including a measure of Brazil's approval of the United States,

perhaps from the Latinobarómetro¹⁸⁶ opinion poll, would influence voting affinity for either the United States or for China. One might expect that as Brazil's opinion of the United States falls, so too does its voting affinity; this, in turn, may result in a rising voting affinity with China. Fourth, categorizing the UNGA votes in terms of their significance may shed light onto the type of voting affinity that Brazil shares with both the United States and China. For example, Brazil may have a higher voting affinity with China on issues of sovereignty and development. Categorizing these votes, however, would be relatively subjective and time consuming. Fifth, examining both Sino-Brazilian and U.S.-Brazilian voting affinity in the UN Security Council may prove an intriguing line of future research. As China and the United States are both permanent members of the Security Council, and the UNGA has elected Brazil as a rotating member of the Latin American and Caribbean Group a total of ten times, there may be adequate data to examine those voting outcomes. Sixth, broadening this study to include all Latin American nations would increase the number of available observations and thus strengthen the robustness of the resultant voting affinity analyses. While these aforementioned lines of future research were beyond the scope of this thesis, they would no doubt produce a more significant contribution to the voting affinity literature and would yield additional insights into the field of Sino-Latin American relations.

¹⁸⁶ See: <http://www.latinobarometro.org/latino/latinobarometro.jsp>.

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